DRAFT

For Discussion Purposes Only
REV: 05 / 16 / 03

State of California
The Resources Agency
Department of Water Resources
Division of Environmental Services
Site Assessment Section
1725 23rd Street, Suite 220
Sacramento, California 95816

PHASE II ENVIRONMENTAL SITE ASSESSMENT

IN-DELTA STORAGE PROJECT
CONTRA COSTA & SAN JOAQUIN COUNTIES, CALIFORNIA
MAY 2003

GRAY DAVIS
Governor
State of California

MARY D. NICHOLS
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FOREWORD

The Department of Water Resources' Site Assessment Section conducted a Phase II Environmental Site Assessment for CALFED's In-Delta Storage Project ("Project"). The proposed project site ("Site") consists of the following properties located in the Sacramento/San Joaquin Delta: Bacon Island, Bouldin Island, Holland Tract, and Webb Tract. This assessment is part of a comprehensive State feasibility study for CALFED's In-Delta Storage Program ("Program").

The purpose of this Phase II ESA is to evaluate the nature and extent of suspected hazardous substance contamination as identified in the modified Phase I ESA for the Site dated December 2001. This Phase II ESA was performed in accordance with standards prescribed in American Society for Testing and Materials Designation E 1903-97 and DWR guidelines. This study was requested and authorized by Leslie Pierce of DWR's Surface Storage Investigations Branch.

The modified Phase I ESA revealed signs of potential soil contamination throughout the Site. The majority of the suspected contamination appeared to be at vehicle and farm equipment maintenance facilities located on each of the aforementioned properties. To determine the nature of contamination, soil sampling was recommended.

In September 2002, SAS staff collected a total of 77 soil samples at the Site. High levels of petroleum hydrocarbons, such as oil and grease, were detected at the vehicle and farm equipment maintenance facilities, especially in areas around or near fuel and lubricating oil tanks. Low concentrations of other potential contaminants, such as heavy metals, chlorinated pesticides, and organic solvents were also detected on each property. However, in each instance, their levels never exceeded the Total Threshold Limit Concentrations as established in Title 22 of the California Code of Regulations.

Based on the results of the Phase II ESA sampling, SAS recommends further investigation of the identified "hot spot" areas to better delineate the extent of contamination. Further investigation may include more invasive subsurface soil sampling, surface water and groundwater sampling, and environmental fate studies for each of the contaminants of concern. SAS also recommends that any contaminated soil at or near water supply well sites be removed and properly disposed of, or remediated, depending on the extent of contamination.

Lastly, SAS recommends that all measures be taken to indemnify the State from any liability associated with future hazardous substance contamination or remedial actions associated with the natural gas wells that are present throughout the Site. At this time, these gas wells and the parcels on which they are situated may not be part of the land acquisition for the Project. Such measures may include establishing baseline soil and groundwater sampling data for the properties surrounding the gas wells or inserting indemnification clauses in each of the proposed purchase agreements.

For additional information, please contact Derrick J. Adachi, Chief of DWR's Site Assessment Section, at (916) 445-6449, or James Gleim, at (916) 445-6228.

Barbara McDonnell, Chief
Division of Environmental Services

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By

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Editorial and Review

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Phase II Environmental Site Assessment, as defined by American Society of Testing and Materials Designation E 1903-97, is to, "…evaluate the recognized environmental conditions identified in the Phase I ESA for the purpose of providing sufficient information regarding the nature and extent of contamination to assist in making informed business decisions about the property; and where applicable, providing the level of knowledge necessary to satisfy the innocent purchaser defense under [the Comprehensive Environmental Response, Compensation and Liability Act.]"

The ASTM designation defines *recognized environmental conditions* as, "…the presence or likely presence of any hazardous substances or petroleum products on property under conditions that indicate an existing release, a past release, or material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws."

1.2 Scope of Services

This investigation has been conducted in accordance with industry-accepted ASTM, Designation E 1903-97 for Phase II ESA's.

DWR's investigation included the following tasks:

- Positive determination of potential soil contamination identified through the Phase I ESA process
- Review of existing information
- Soil sampling and analysis
- Quality assurance/quality control procedures

1.3 Limitations

Any level of assessment cannot determine that a property is free of all environmental impairments such as chemicals and toxic substances. DWR cannot offer a certification or guarantee the absence of these conditions on the Site. This assessment is based on the findings made during the Phase I ESA and Phase II ESA investigations.

Variations could exist beyond or between areas investigated for this assessment. Conditions reported or observed could change because of the migration of contaminants, changes in grade, rainfall variation, temperature, and/or other factors not apparent during

this assessment.

This assessment was performed for the sole use of CALFED's In-Delta Storage Program. Any reliance or use of information contained herein by a third party is at such party's sole risk. Other parties who rely on information provided in this report are responsible for determining the adequacy of information provided by others.

The services performed by DWR have been conducted in a manner consistent with the level of care and skill by members of our profession currently practicing under similar conditions in the State of California. No other warranty, either expressed or implied, is made.

Regarding the usability and validity of data, the ASTM standard states, "…measurements and sampling data only represent the site conditions at the time of data collection. Therefore, the usability of data collected as part of a Phase II ESA may have a finite lifetime depending on the application and use being made of the data. An environmental professional should evaluate whether previously generated data are appropriate for any subsequent use beyond the original purpose for which it was collected." Therefore, for future use, it is recommended that any party wishing to rely on the data contained in this report should consult with either SAS staff or another qualified environmental professional.

2.0 SITE DESCRIPTION AND BACKGROUND

2.1 Legal Description

The Site consists of the following properties located approximately 10 miles west of Stockton in the Sacramento/San Joaquin Delta: Bacon Island, Bouldin Island, Holland Tract, and Webb Tract. Bacon and Bouldin Islands are in San Joaquin County, while Holland and Webb Tracts are in Contra Costa County, California. The Site is located on the following USGS 7.5 minute quadrangles: Bouldin Island, Isleton, Jersey Island, Terminous, and Woodward Island quadrangles. The total land area is approximately 21,048 acres. Site location maps are in Figures 1-4.

It should be noted that Victoria Island was originally part of the Site and included in modified Phase I ESA. However, the project proponents have since removed Victoria Island from the proposed Project. As a result, Victoria Island is not included as part of this Phase II ESA.

2.2 Site Description and Features

This is a general composite description of each Site property as observed during the site reconnaissance portion of the modified Phase I ESA performed on September 17-24, 2001 and the Phase II ESA sampling activities performed on September 5-10, 2002. A more detailed description of each property and its features is provided in the December 2001 modified Phase I ESA report.

2.2.1 Bacon Island

Bacon Island is primarily farmed agricultural land. All roads within the island are unpaved. Youngs Slu enters the island from the north. Numerous irrigation canals also intersect the island.

A variety of structures and facilities are on the island which are associated with the farming operations performed there. Four farm equipment maintenance and staging areas were present, as well as numerous single-family residences. An unpaved aircraft runway was present along the eastern perimeter of the island, approximately two miles north of the island access bridge. Three packing sheds and two trash piles were also observed on the island.

2.2.2 Bouldin Island

Bouldin Island is primarily farmed agricultural land. Sheep grazing is also occurring on the island. All roads within the island are unpaved with the exception of Highway 12 which bisects it. There are numerous irrigation canals transect the island as well.

A variety of structures and facilities are on the island which are associated with the farming operations performed there. A farm headquarters facility with out-structures is located on the eastern perimeter of the island, immediately south of the Terminous Bridge. Two radio towers were present in the southwest portion of the island. Three water pumping stations were also observed. Numerous single-family residences are present along the northern perimeter of the island.

2.2.3 Holland Tract

Holland Tract appears to be used for farming and cattle grazing. All roads within the tract are unpaved with the exception of Holland Tract Road along the southern border. Numerous irrigation canals and fences transect the tract. Approximately two square miles located in the southwest portion of this tract will not be included as part of the Site.

There are two marinas located along the southeastern corner of the tract. The marinas are accessible from the levee road, but are not within the scope of the Project. There are numerous structures and buildings, such as single-family residences, situated along the levee road that could impact the Project. Two areas along the east border appear to be used for the storage of idle farm machinery and equipment. A corral was observed in the center of the tract. Numerous 55-gallon drums and an aboveground storage tank were present on the adjacent property. The contents of these containers or vessels are unknown. Evidence of stained soils was observed in the vicinity of these drums.

2.2.4 Webb Tract

Webb Tract also appears to be is used for farming. All roads within the tract are unpaved. Access to the tract is only by ferry.

A farm headquarters facility with out-structures is located on the western border of the tract. Adjacent to the farm headquarters is a maintenance facility and storage area for farm equipment. A single-family residence was observed at the easternmost point of the tract. A hunting clubhouse was also observed adjacent to the residence. A pumping station was situated along the southern border, as was a natural gas well facility.

2.3 Modified Phase I ESA Results

The purpose of this Phase II ESA is to further investigate the recognized environmental conditions that were identified in the modified Phase I ESA report dated December 2001. Specifically, this Phase II ESA evaluates the nature and extent of suspected hazardous substance contamination at the Site.

The following section is a summary review of the conclusions and recommendations specified in the modified Phase I ESA report for the Site.

2.3.1 Bacon Island

The modified Phase I ESA revealed signs of potential soil contamination in areas on Bacon Island. Stained soils were observed at the following locations: two separate farm headquarters facilities and storage shed on the east, a farm headquarters facility on the northeast, an aircraft runway on the eastern perimeter, and a container storage area on the southeast corner of the island. It was recommended that further investigation of these areas be conducted to determine the nature and extent of contamination.

A number of single-family residences were found on the island. Based on the age of these structures, SAS staff concluded that lead-based paints and asbestos containing materials (ACM) were likely to be present. Invasive sampling and testing of suspect construction materials, such as floor tiles, and coated surfaces were recommended to determine the actual presence of these potentially toxic substances. If the presence of lead-based paint and/or ACM was confirmed, SAS staff recommended that a management or abatement plan be prepared and implemented.

Further investigation of the type of sewage system used by these residences was recommended. In addition, SAS staff recommended that any sewage system should be properly removed prior to any habitat restoration or surface water storage activities to prevent any releases of sewage material into the environment.

No water supply wells were identified from the environmental database search. However, due to the presence of single-family residences and farming operations on the island, the existence of non-reported private wells was highly probable. SAS staff recommended proper decommissioning of any well found to exist on Bacon Island that will not be used by DWR.

The modified Phase I ESA revealed soil staining and pools of product at three oil well facilities on the island. SAS staff concluded that the apparent discharges posed a potential risk for soil, surface water, and groundwater contamination. Two of those wells lie within the new Site boundaries on Section 4 (T22S, R19E). Further investigation at the oil well facilities was recommended to determine the nature and extent of the suspected contamination. Proper decommissioning and closure of these facilities was also recommended.

2.3.2 Bouldin Island

The modified Phase I ESA revealed areas of potential hazardous substance contamination at the farm headquarters facility located along Highway 12 in the center of the island. SAS staff recommended that the nature and extent of the suspected contamination be further investigated by collecting and analyzing soil samples around the large above ground fuel tanks and leaking 55-gallon drums that were present at the time of the site reconnaissance.

Three secured groundwater monitoring wells were observed along the north border of the island. Since wells could potentially serve as conduits for groundwater contamination, it was recommended that they be properly decommissioned in accordance with applicable State and local laws and regulations.

It was also recommended that a large trash pile along the north levee road be properly inventoried and disposed of. Such piles have historically contained an assortment of household garbage, used appliances, spent chemical products, and other solid waste materials. Careful assessment of the contents of the pile may be necessary in order to prevent an accidental release of a hazardous or toxic contaminant.

There was visible evidence that the contents of an unlabeled 6,000-gallon poly tank had been released into the soil. A drainage pond is located approximately 30 feet down gradient from the tank. It is unknown whether any of the contents had migrated into the pond. As a result, it was recommended that the contents of the tank and pond be assessed.

2.3.3 Holland Tract

The modified Phase I ESA revealed signs of potential soil contamination in areas on Holland Tract. Stained soils were observed at the following locations: an equipment storage shed at the southeast corner of the tract, a staging area on the east levee road, and a corral area in the center of the tract. It was recommended that further investigation of these areas be conducted to determine the nature and extent of contamination.

It was reported that the dilapidated single-family residence on the east levee road by the farm equipment staging area is a potential source of hazardous substance liability. Based on the age of the structure, SAS staff concluded that lead-based paints and asbestos containing materials were likely to be present. Invasive sampling and testing of suspect construction materials, such as floor tiles, and coated surfaces were recommended to determine the actual presence of these potentially toxic substances. If the presence of lead-based paint and/or ACM was confirmed, SAS staff recommended that a management or abatement plan be prepared and implemented.

Further investigation of the type of sewage system that may have existed at this structure was recommended. In addition, SAS staff recommended that any sewage system should be properly removed prior to any habitat restoration or surface water storage activities to prevent any releases of sewage material into the environment.

The modified Phase I ESA also revealed the presence of one water supply well in the center of the tract. Two water pumping stations were also identified, one at the northernmost tip of the tract, the other along the east border. In order to prevent the wells from potentially serving as conduits for groundwater contamination, SAS staff recommended proper decommissioning of any well that will not be used by DWR.

2.3.4 Webb Tract

SAS staff recommended that further investigation be conducted at the farm maintenance headquarters on the western side of the tract. The headquarters facility was identified as having numerous areas of possible contamination that warrant further investigation. Extensive soil staining was observed surrounding the 55-gallon drums and aboveground storage tanks on the northern side of the maintenance shed. The discolored soil surrounding farm equipment and stained soil under heavy equipment are indications that local housekeeping practices may have allowed release of farm chemicals including grease, oil, herbicides, pesticides, and fertilizers. The trash burning area could also be a source of heavy metals contamination. The Phase I ESA reported that, based on the age of the facility, the former worker living quarters adjacent to the maintenance shed may potentially contain lead and asbestos containing construction materials.

Further investigation of the fuel tanks along the south levee road was recommended. The tanks at the hunting clubhouse, water pumping station, and gas well facility all displayed evidence of spillage or leakage.

Since the monitoring wells on the island could potentially serve as a conduit for contaminants to reach groundwater, it was recommended that they be properly decommissioned and removed.

3.0 PHASE II ESA SAMPLING

After receiving the recommendations made in the modified Phase I ESA report, Leslie Pierce of DWR's Surface Storage Investigations Branch requested that Phase II sampling be performed in the aforementioned locations. Phase II soil sampling was performed on September 5-10, 2002 by SAS staff. Representative samples were collected in accordance with procedures specified in "Test Methods for Evaluating Solid Waste, 3rd edition, SW-846, U.S. EPA, September 1986." A thorough discussion of sampling procedures is provided in the Sampling Plan (see Appendix A). The Sampling Plan includes sampling objectives, rationale, and methods.

All samples were analyzed by Caltest Analytical Laboratory in Napa, California. Soil samples were analyzed for Title 22 metals (including Chrome VI), chlorinated pesticides, polychlorinated biphenyls, aromatic and total hydrocarbons (including BTEX), oil and grease, organophosphorus pesticides, and semi-volatile organic pesticides.

Note that only positive sample results are reported in the text of this report. In order to ease reporting and discussion, those soil samples which had no analyte detected in them were not listed in the tables in this section. See Appendix B for a summary compilation of sample results. Appendix C contains the original Caltest analytical results and chain of custody forms.

Photographs of sampling are contained in Appendix D. All photographs were taken by James Gleim.

3.1 Bacon Island Soil Samples

Authoritative soil samples were collected on Bacon Island at areas where heavily stained soils were observed. Specifically, samples were collected at the aircraft runway, numerous areas at both farm headquarters facilities on the eastern end of the island, and at the west side storage shed.

3.1.1 Aircraft Runway Sample Results

The runway is a roughly paved strip situated one and one-half miles north of the Bacon Island Bridge, near the east levee road (Photo 1). The runway is situated in an east-west direction. Stained soil was observed in the area south of an aboveground fuel tank. One sample was collected at 0.5 feet below ground surface towards the eastern end of the runway approximately 30 feet south of the fuel tank. Sample results are shown in Table 1.


Photo 1

TABLE 1

AIRCRAFT RUNWAY SAMPLE RESULTS
(Bacon Island)

CONSTITUENT	REGULATORY LIMITS	SAMPLE RESULTS (mg/kg)
	TTLC* (mg/kg)	0.5' BGS** Sample # DWB-22a (30' south of fuel tank)
METALS:		
Arsenic	500	6
Barium	10,000	130
Chromium (total)	2,500	31
Cobalt	8,000	9
Copper	2,500	21
Lead	1,000	12
Mercury	20	0.03
Molybdenum	3,500	2
Nickel	2,000	39
Vanadium	2,400	47
Zinc	5,000	55
OTHERS:		
pH	Not Available	5.0
Oil and Grease (mg/kg)	Not Available	**10,200**

* **TTLC = Total Threshold Limit Concentration**
** BGS = Below Ground Surface

The soils sample collected at the runway detected high levels of oil and grease (highlighted in red) that may require remediation. No other elements or compounds were detected in the sample at levels that exceed the regulatory threshold value (if available).

3.1.2 North Farm Headquarters Sample Results: Waste Oil Drums

A farm operations headquarters is located approximately one mile southwest of the northeast corner of the island. Four unlabeled 55-gallon drums were observed in the northernmost storage shed (Photo 2). Stained soil was observed in the vicinity of the drums. Samples were collected south of the drums, on the opposite side of the wall visible in Photo 2. The wall does not touch the ground, therefore any spillage or leakage from the drums would also be detected there. Sample results are shown in Table 2.

Photo 2

TABLE 2

WASTE OIL DRUM SAMPLE RESULTS
(Bacon Island)

CONSTITUENT	REGULATORY LIMITS	SAMPLE RESULTS (mg/kg)		
	TTLC (mg/kg)	0.5' BGS* Sample # DWB-23a (adjacent to drums)	2.0' BGS Sample # DWB-24b1 (adjacent to drums)	2.0' BGS Sample # DWB-24b2 (split sample)
METALS:				
Arsenic	500	11	4	5
Barium	10,000	150	42	50
Chromium (total)	2,500	33	6	6
Cobalt	8,000	10	1.6	1.7
Copper	2,500	25	4	4
Lead	1,000	19	1	2
Mercury	20	0.08	ND	ND
Molybdenum	3,500	3	3	3
Nickel	2,000	46	9	10
Vanadium	2,400	52	11	13
Zinc	5,000	160	5	7
CHLORINATED PESTICIDES				
	Reporting limit (mg/kg)	0.5' BGS Sample # DWB-23a (adjacent to drums)	2.0' BGS Sample # DWB-24b1 (adjacent to drums)	2.0' BGS Sample # DWB-24b2 (split sample)
gamma-BHC (Lindane)	0.3	0.32	ND	ND
OTHER				
	REGULATORY LIMIT	0.5' BGS Sample # DWB-23a (adjacent to drums)	2.0' BGS Sample # DWB-24b1 (adjacent to drums)	2.0' BGS Sample # DWB-24b2 (split sample)
pH	None	4.6	4.4	4.2
Oil and Grease	None	**28,300**	144	132

* BGS = Below ground surface ND = None Detected

The surface soil sample collected near the waste oil drums revealed high levels of oil and grease (highlighted in red) that may require remediation. However the two split samples collected at two feet below ground surface contained 99.5% less. Trace amounts of Lindane were also detected in the surface sample. No other samples detected the presence of an element or compound at a level of concern, nor do they exceed the regulatory threshold value (if available).

3.1.3 North Farm Headquarters Sample Results: Oil Tank

Two aboveground storage tanks and one 55-gallon drum were identified in the Phase I ESA report. The tanks and drum are located on the north side of the northernmost storage shed at the north farm headquarters (Photos 3 and 4). Stained soil was observed in their vicinity. Surface and depth samples were collected between the containers, where the worse stain was

Photo 3

Photo 4

observed. Sample results are shown in Table 3.

TABLE 3

WASTE OIL TANK SAMPLE RESULTS *(Bacon Island)*			
CONSTITUENT	**REGULATORY LIMITS**	**SAMPLE RESULTS** (mg/kg)	
	TTLC (mg/kg)	0.5' BGS* Sample # DWB-25a (between tank and drums)	2.0' BGS Sample # DWB-25b
METALS			
Arsenic	500	8	14
Barium	10,000	120	82
Chromium (total)	2,500	26	12
Cobalt	8,000	8.3	6.9
Copper	2,500	20	9
Lead	1,000	16	3
Mercury	20	0.05	0.03
Molybdenum	3,500	2	5
Nickel	2,000	41	24
Vanadium	2,400	44	29
Zinc	5,000	240	19
OTHER			
	REGULATORY LIMIT	0.5' BGS Sample # DWB-25a (between tank and drums)	2.0' BGS Sample # DWB-25b
pH	None	4.6	3.8
Oil and Grease	None	**195,000**	126

* BGS = Below ground surface ND = None Detected

The surface soil sample collected between the tank and drum revealed extremely high levels of oil and grease (highlighted in red) that may require remediation. No other samples detected the presence of an element or compound at a level of concern, nor do they exceed the regulatory threshold value (if available).

3.1.4 North Farm Headquarters Sample Results: Wash-down Area

An equipment wash-down area was identified during the Phase I ESA. The wash-down area is located on the south side of the packing shed at the north farm headquarters. Wet soil was observed at this location. However, it is often difficult to distinguish between soil that is wet with water and soil stained with chemicals. Therefore, samples were collected at this location (Photo 5). Authoritative surface and depth samples were collected where the majority of the wash-down rinseate seem to collect. Sample results are shown in Table 4.

Photo 5

TABLE 4

WASH-DOWN AREA SAMPLE RESULTS *(Bacon Island)*			
CONSTITUENT	**REGULATORY LIMITS**	**SAMPLE RESULTS** (mg/kg)	
	TTLC (mg/kg)	0.5' BGS* Sample # DWB-26a	2.0' BGS Sample # DWB-26b
METALS			
Arsenic	500	12	3
Barium	10,000	120	28
Chromium (total)	2,500	22	3
Cobalt	8,000	4.8	1.2
Copper	2,500	20	2
Lead	1,000	9	1
Mercury	20	0.03	ND
Molybdenum	3,500	4	1
Nickel	2,000	26	6
Vanadium	2,400	44	7.3
Zinc	5,000	55	7
OTHER			
	REGULATORY LIMIT	0.5' BGS Sample # DWB-26a	2.0' BGS Sample # DWB-26b
pH	None	6.4	6.2
Oil and Grease	None	291	54

* BGS = Below ground surface ND = None Detected

The surface soil sample collected down-gradient of the wash-down area revealed low levels of oil and grease. No other elements or compounds were detected at levels that exceeded the regulatory threshold values (if available).

3.1.5 North Farm Headquarters Sample Results: Aboveground Storage Tanks

The Phase I ESA identified two aboveground storage tanks approximately one-eighth mile southeast of the packing shed. A fenced enclosure in this area also contained four 55-gallon drums and one 5-gallon container. Stained soil was observed under the 55-gallon drums as well as in the vicinity of the 750-gallon tank (Photos 6-7). SAS staff noted that upon visiting this location to collect samples, that the drums, fence, and smaller tank were absent. One surface sample was collected. Sample results are shown in Table 5.

Photo 6

Photo 7

TABLE 5

ABOVEGROUND STORAGE TANKS SAMPLE RESULTS *(Bacon Island)*		
CONSTITUENT	**REGULATORY LIMITS**	**SAMPLE RESULTS** (mg/kg)
	TTLC (mg/kg)	0.5' BGS* Sample # DWB-27a
METALS		
Arsenic	500	10
Barium	10,000	140
Beryllium	75	0.5
Chromium (total)	2,500	37
Cobalt	8,000	8.9
Copper	2,500	29
Lead	1,000	270
Mercury	20	0.1
Molybdenum	3,500	3
Nickel	2,000	42
Vanadium	2,400	60
Zinc	5,000	53
OTHER		
	REGULATORY LIMIT	0.5' BGS Sample # DWB-27a
pH	None	3.9
Oil and Grease (mg/kg)	None	**17,800**
* BGS = Below ground surface		

The surface soil sample collected revealed high levels of oil and grease (highlighted in red) that may require remediation. No other elements or compounds were detected at levels that exceeded the regulatory threshold values (if available).

3.1.6 West Side Shed Sample Results: Fuel Pump

The Phase I ESA identified two aboveground storage tanks along the northwest levee road. The tanks are apparently supply fuel for the valve downhill from it (Photo 8). Stained soil was observed in the area surrounding the pump. One surface sample and one depth sample was collected. Sample results are shown in Table 6.

Photo 8

TABLE 6

FUEL PUMP SAMPLE RESULTS
(Bacon Island)

CONSTITUENT	REGULATORY LIMITS	SAMPLE RESULTS (mg/kg)		
METALS				
	TTLC (mg/kg)	0.5' BGS* Sample # DWB-28a (adjacent to pump)	2.0' BGS Sample # DWB-28b1 (adjacent to pump)	2.0' BGS Sample # DWB-28b2 (split sample)
Arsenic	500	8	5	4
Barium	10,000	250	110	110
Cadmium	1,000	0.05	ND	ND
Chromium (total)	2,500	12	27	26
Cobalt	8,000	38	7.8	7.7
Copper	2,500	96	22	22
Lead	1,000	0.06	15	14
Mercury	20	5	0.06	0.06
Molybdenum	3,500	39	2	1
Nickel	2,000	ND	29	29
Vanadium	2,400	31	42	41
Zinc	5,000	290	280	270
PETROLEUM HYDROCARBONS				
	Reporting limit (mg/kg)	0.5' BGS Sample # DWB-28a (adjacent to pump)	2.0' BGS Sample # DWB-28b1 (adjacent to pump)	2.0' BGS Sample # DWB-28b2 (split sample)
Xylenes (Total)	0.013	ND	0.10	0.10
OTHER				
	REGULATORY LIMIT	0.5' BGS Sample # DWB-28a (adjacent to pump)	2.0' BGS Sample # DWB-28b1 (adjacent to pump)	2.0' BGS Sample # DWB-28b2 (split sample)
pH	None	5.1	5.5	5.6
Oil and Grease	None	**296,000**	**35,500**	**35,300**

* BGS = Below ground surface ND = None Detected

The soil samples collected near the fuel pump revealed high levels of oil and grease, especially in the surface sample (highlighted in red) that may require remediation. The subsurface samples also detected the presence xylene, a component of gasoline. In addition, an elevated level of mercury was detected in the surface sample. Although the concentration does not exceed the TTLC, it is significantly higher than what was detected approximately two feet below. No other elements or compounds were detected at levels that exceeded the regulatory threshold values (if available).

3.1.7 West Side Shed Sample Results: Burn Drum

The Phase I ESA identified ten 55-gallon drums and approximately 20 tires at the northeast end of the shed. None of the drums were labeled. No signs of leakage or spillage were observed in the area surrounding the drums. One open drum appeared to be used to burn trash. Within the debris in the drum, burnt oil filters were observed (Photo 9). One surface sample and one depth sample were collected. Sample results are


Photo 9

shown in Table 7.

TABLE 7

BURN DRUM SAMPLE RESULTS *(Bacon Island)*			
CONSTITUENT	**REGULATORY LIMITS**	**SAMPLE RESULTS** (mg/kg)	
METALS			
	TTLC (mg/kg)	0.5' BGS* Sample # DWB-29a	2.0' BGS Sample # DWB-29b
Arsenic	500	5	11
Barium	10,000	130	120
Chromium (total)	2,500	19	24
Cobalt	8,000	5.3	5.5
Copper	2,500	130	27
Lead	1,000	52	17
Mercury	20	0.05	0.07
Molybdenum	3,500	3	4
Nickel	2,000	23	24
Vanadium	2,400	24	46
Zinc	5,000	520	43
CHLORINATED PESTICIDES			
	REPORTING LIMIT	0.5' BGS Sample # DWB-29a	2.0' BGS Sample # DWB-29b
p,p'-DDE	0.3	ND	0.01
OTHER			
	REGULATORY LIMIT	0.5' BGS Sample # DWB-29a	2.0' BGS Sample # DWB-29b
pH	None	5.4	4.8
Oil and Grease	None	**89,400**	**2,490**
* BGS = Below ground surface ND = None Detected			

The soil samples collected near the burn drum revealed high levels of oil and grease, especially in the surface sample (highlighted in red) that may require remediation. The subsurface samples also detected the a trace amount of p,p'-DDE, a pesticide. No other samples detected the presence of an element or compound at a level of concern, nor do they exceed the regulatory threshold value (if available).

3.2 Bouldin Island Soil Samples

Authoritative soil samples were collected on Bouldin Island at areas where extensive stained soil was observed or suspected. Specifically, samples were collected at an aboveground fuel tank located at the farm maintenance headquarters along the east side of the island. A sample was also collected were numerous 55-gallon drums were observed during the Phase I ESA site reconnaissance. A background sample was also collected at this island.

3.2.1 Farm Headquarters Fuel Tank

The Phase I ESA identified stained soil under two aboveground fuel tanks at the farm headquarters (Photos 10-11). Samples were collected from the stained area along the south side of the tanks. Sample results are shown in Table 8.

Photo 10

Photo 11

TABLE 8

FUEL TANK SOIL SAMPLE RESULTS
(Bouldin Island)

CONSTITUENT	REGULATORY LIMITS	SAMPLE RESULTS (mg/kg)			
METALS					
	TTLC (mg/kg)	0.5' BGS* Sample # DWL-30a1	0.5' BGS Sample # DWL-30a2 (split sample)	2.0' BGS Sample # DWL-30b	4.0' BGS Sample # DWL-30c
Arsenic	500	4	4	6	2
Barium	10,000	110	110	140	58
Cadmium	1,000	ND	ND	0.8	ND
Chromium (total)	2,500	2	20	20	7
Cobalt	8,000	8.5	8.8	6.8	3.8
Copper	2,500	22	22	19	5
Lead	1,000	20	17	8	2
Mercury	20	0.08	0.15	0.08	ND
Nickel	2,000	24	24	21	11
Vanadium	2,400	32	ND	31	17
Zinc	5,000	190	32	310	17
PETROLEUM HYDROCARBONS					
	Reporting limit (mg/kg)	0.5' BGS Sample # DWL-30a1	0.5' BGS Sample # DWL-30a2 (split sample)	2.0' BGS Sample # DWL-30b	4.0' BGS Sample # DWL-30c
Toluene	0.013	0.016	0.018	ND	0.016
Ethyl benzene	0.013	ND	ND	ND	0.057
Xylenes (Total)	0.013	0.045	0.041	0.12	0.43
OTHER					
	REGULATORY LIMIT	0.5' BGS Sample # DWL-30a1	0.5' BGS Sample # DWL-30a2 (split sample)	2.0' BGS Sample # DWL-30b	4.0' BGS Sample # DWL-30c
pH	None	5.8	5.8	5.6	6.6
Oil and Grease	None	**84,600**	**85,800**	**84,000**	**52,300**

* BGS = Below ground surface ND = None Detected

The soil samples collected near the fuel tanks revealed high levels of oil and grease that have apparently saturated down at least four feet below ground surface (highlighted in red). Trace amounts of toluene, ethyl benzene, and xylene, which are components of gasoline, were also detected in the samples. No other elements or compounds were detected at levels that exceed the regulatory threshold values (if available).

3.2.2 Farm Headquarters: Former Drum Storage Area

The Phase I ESA identified approximately twenty-five 55-gallon drums and farm machinery parts west of the equipment storage shed. Some of the drums were observed to be empty. However, others were sealed and unlabeled. Stained soil was observed in the area under and around the drums and equipment (Photos 12-13).

Photo 12

Photo 13

Upon visiting this location for collection of soil samples, SAS staff noted that all trash, drums, and equipment, had been removed. SAS staff also noted the absence of the storage shed. Note that Photo 14 was taken from the same location and direction as Photo 12. One surface sample was collected where SAS staff could best determine the location of the drums. Sample results are shown in Table 9.

Photo 14

TABLE 9

FORMER DRUM STORAGE AREA SAMPLE RESULTS
(Bouldin Island)

CONSTITUENT	REGULATORY LIMITS	SAMPLE RESULTS (mg/kg)
METALS		
	TTLC (mg/kg)	0.5' BGS* Sample # DWL-32a
Arsenic	500	4
Barium	10,000	130
Beryllium	75	
Chromium (total)	2,500	17
Cobalt	8,000	8.1
Copper	2,500	38
Lead	1,000	52
Mercury	20	0.06
Molybdenum	3,500	17
Nickel	2,000	17
Vanadium	2,400	38
Zinc	5,000	210
OTHER		
	REGULATORY LIMIT	0.5' BGS Sample # DWL-32a
pH	None	6.2
Oil and Grease (mg/kg)	None	**112,000**

* BGS = Below ground surface

The soil sample collected at the former drum and equipment storage area revealed high levels of oil and grease (highlighted in red). No other elements or compounds were detected at levels that exceed any regulatory threshold value (if available).

3.2.3 Background Sample

Per the sampling protocol, a single background sample was collected on Bouldin Island. The sample was collected approximately one mile west (inland) of the eastern tip of the island. The sample was collected from the edge of a fallow farm field. Sample results are shown in Table 10.

TABLE 10

BACKGROUND SAMPLE RESULTS
(Bouldin Island)

CONSTITUENT	REGULATORY LIMITS	SAMPLE RESULTS (mg/kg)
METALS		
	TTLC (mg/kg)	0.5' BGS* Sample # DWL-31a
Arsenic	500	14
Barium	10,000	170
Chromium (total)	2,500	38
Cobalt	8,000	13
Copper	2,500	26
Lead	1,000	10
Mercury	20	0.07
Molybdenum	3,500	1
Nickel	2,000	46
Vanadium	2,400	56
Zinc	5,000	61
CHLORINATED PESTICIDES		
	REPORTING LIMIT	0.5' BGS Sample # DWL-31a
p,p'-DDD	0.3	0.049
p,p'-DDE	0.3	0.17
p,p'-DDT	0.3	0.089
OTHER		
	REGULATORY LIMIT	0.5' BGS Sample # DWL-31a
pH	None	6.0
Oil and Grease (mg/kg)	None	ND

* BGS = Below ground surface

The background soil sample collected in the field did not indicate the presence of an element or compound at levels that exceeded any regulatory threshold value (if available).

3.3 Holland Tract Soil Samples

Authoritative soil samples were collected on Holland Tract at areas where extensive stained soil was observed or suspected. Specifically, samples were collected at a storage shed and a portable aboveground storage tank along the east border, and at a waste oil storage site in the center of the tract. Three background samples were also collected at this location.

3.3.1 East Side Barn

The Phase I ESA identified a barn situated along the east side of the tract (Photo 15). With in the barn, it was noted that the concrete foundation was stained along the west side. Further observation noted that the staining ran down the outside of the foundation and into the soil (Photo 16). Two sets of samples were collected at this location. One set, consisting of a surface and subsurface sample, was collected close to the foundation. The second set of samples were collected approximately four feet west (down gradient) from the foundation. Sample results are shown in Table 11.

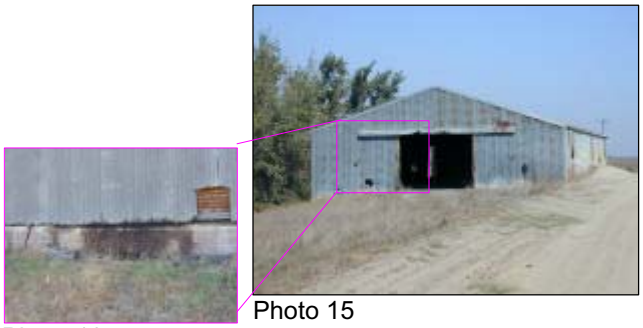

Photo 16

Photo 15

TABLE 11

EAST SIDE BARN SAMPLE RESULTS
(Holland Tract)

CONSTITUENT	REGULATORY LIMITS	SAMPLE RESULTS (mg/kg)			
METALS					
	TTLC (mg/kg)	0.5' BGS* Sample # DWH-1a (near foundation)	1.5' BGS Sample # DWH-1b (near foundation)	0.5' BGS Sample # DWH-2a (4 feet from foundation)	1.5' BGS Sample # DWH-2b (4 feet from foundation)
Arsenic	500	3	6	2	4
Barium	10,000	44	86	28	70
Beryllium	75	0.2	0.3	ND	ND
Cadmium	1,000	1.3	ND	ND	ND
Chromium (total)	2,500	13	23	9	17
Cobalt	8,000	3.2	6.3	2.6	3.8
Copper	2,500	10	29	4	16
Lead	1,000	20	31	3	18
Mercury	20	ND	0.04	ND	0.03
Molybdenum	3,500	2	4	ND	3
Nickel	2,000	13	23	10	19
Thallium	700	16	ND	ND	ND
Vanadium	2,400	530	36	13	30
Zinc	5,000	4.6	310	35	68

TABLE 11 *(continued)*

EAST SIDE BARN SAMPLE RESULTS *(Holland Tract)*					
CONSTITUENT	**REGULATORY LIMITS**	**SAMPLE RESULTS** (mg/kg)			
CHLORINATED PESTICIDES					
	Reporting limit (mg/kg)	0.5' BGS Sample # DWH-1a (near foundation)	1.5' BGS Sample # DWH-1b (near foundation)	0.5' BGS Sample # DWH-2a (4 feet from foundation)	1.5' BGS Sample # DWH-2b (4 feet from foundation)
p,p'-DDE	0.013	ND	0.045	ND	0.35
Diedrin	0.013	ND	0.34	ND	1.5
Endrin Ketone	0.013	ND	ND	ND	0.022
OTHER					
	REGULATORY LIMIT	0.5' BGS Sample # DWH-1a (near foundation)	1.5' BGS Sample # DWH-1b (near foundation)	0.5' BGS Sample # DWH-2a (4 feet from foundation)	1.5' BGS Sample # DWH-2b (4 feet from foundation)
pH	None	4.6	6.4	6.1	5.5
Oil and Grease	None	192	93	ND	36
* BGS = Below ground surface ND = None Detected					

The soil samples collected near the barn foundation did not revealed high levels petroleum hydrocarbons as suspected. However, traces of chlorinated pesticides were detected in both subsurface samples. No other elements or compounds were detected at a level that exceeded the regulatory threshold value (if available).

3.3.2 Equipment Staging Area

The Phase I ESA identified a farm equipment staging area approximately one-half mile south of the north tip of the island. Numerous tractors, trucks, and implements were observed at this location. A 10,000 gallon diesel fuel trailer was observed here (Photo 17). The soil under the trailer was stained.

Photo 17

Two 55-gallon drums at this location are apparently used for burning trash. Approximately twelve more unlabeled 55-gallon drums were observed at this location. Their use could not be determined. Five 55-gallon drums at this area were labeled as being tractor hydraulic fluid barn situated along the east side of the tract (Photo 18). Two sets of samples were collected at this location. One set, consisting of a surface and subsurface sample, was collected at the stained soil by the 10,000 gallon trailer. The second sample set was collected from the stain between the 55-gallon drums. Sample results are shown in Table 12.

Photo 18

TABLE 12

EQUIPMENT STAGING AREA SAMPLE RESULTS
(Holland Tract)

CONSTITUENT	REGULATORY LIMITS	SAMPLE RESULTS (mg/kg)			
METALS					
	TTLC (mg/kg)	0.5' BGS* Sample # DWH-3a (under tank)	2.0' BGS Sample # DWH-3b (under tank)	0.5' BGS Sample # DWH-4a (between drums)	2.0' BGS Sample # DWH-4b (between drums)
Arsenic	500	2	1	2	3
Barium	10,000	25	27	30	35
Chromium (total)	2,500	9	11	9	10
Cobalt	8,000	2.3	3.6	2.5	2.5
Copper	2,500	3	4	3	4
Lead	1,000	2	2	8	3
Molybdenum	3,500	ND	ND	ND	1
Nickel	2,000	9	13	10	11
Vanadium	2,400	12	18	13	15
Zinc	5,000	15	11	35	9
CHLORINATED PESTICIDES					
	Reporting limit (mg/kg)	0.5' BGS Sample # DWH-3a (under tank)	2.0' BGS Sample # DWH-3b (under tank)	0.5' BGS Sample # DWH-4a (between drums)	2.0' BGS Sample # DWH-4b (between drums)
Endosulfan	0.006	ND	ND	0.165	ND
PETROLEUM HYDROCARBONS					
	Reporting limit (mg/kg)	0.5' BGS Sample # DWH-3a (under tank)	2.0' BGS Sample # DWH-3b (under tank)	0.5' BGS Sample # DWH-4a (between drums)	2.0' BGS Sample # DWH-4b (between drums)
Xylene	0.0025	0.26	ND	ND	ND
SEMIVOLITILE ORGANIC COMPOUNDS					
	Reporting limit (mg/kg)	0.5' BGS Sample # DWH-3a (under tank)	2.0' BGS Sample # DWH-3b (under tank)	0.5' BGS Sample # DWH-4a (between drums)	2.0' BGS Sample # DWH-4b (between drums)
Naphthalene	0.033	12	ND	ND	ND
OTHER					
	REGULATORY LIMIT	0.5' BGS Sample # DWH-3a (under tank)	2.0' BGS Sample # DWH-3b (under tank)	0.5' BGS Sample # DWH-4a (between drums)	2.0' BGS Sample # DWH-4b (between drums)
pH	None	7.6	7.7	7.1	7.6
Oil and Grease	None	**51,800**	ND	**75,600**	ND

* BGS = Below ground surface ND = None Detected

The soil samples collected at the equipment staging area revealed high levels of oil and grease on the surface (highlighted in red). Traces of a chlorinated pesticide were detected on the surface between the 55-gallon drums. Xylene was detected on the surface near the fuel tank. Naphthalene was also detected on the surface under the tank. No other elements or compounds were detected at a level that exceeded the regulatory threshold value (if available).

3.3.3 Waste Oil Area


Photo 19

The Phase I ESA identified a waste oil storage area situated one and one-half miles north of the south levee entrance gate (Photo 19). Observations at this location included one 500-gallon aboveground storage tank, 28 55-gallon drums, approximately 30 used engine oil filters, and two tractor batteries. Wide-spread soil staining was observed in the area surrounding the drums and 500-gallon tank. Soil samples were collected in four locations: eight feet north of the telephone pole, near the palette of batteries, under the storage tank, and approximately 20 feet west of the tank among the 55-gallon drums. Sample results are shown in Tables 13-15.

TABLE 13

WASTE OIL AREA SAMPLE RESULTS
(Holland Tract)

CONSTITUENT	REGULATORY LIMITS	SAMPLE RESULTS (mg/kg)			
METALS					
	TTLC (mg/kg)	0.5' BGS* Sample # DWH-5a (8' north of pole)	2.0' BGS Sample # DWH-5b (8' north of pole)	0.5' BGS Sample # DWH-7a (near batteries)	2.0' BGS Sample # DWH-7b (near batteries)
Arsenic	500	3	3	2	2
Barium	10,000	41	36	36	19
Chromium (total)	2,500	10	11	9	9
Cobalt	8,000	2.5	2.8	2.5	2.7
Copper	2,500	8	4	11	4
Lead	1,000	8	4	16	3
Molybdenum	3,500	1	ND	ND	ND
Nickel	2,000	11	12	10	10
Vanadium	2,400	13	15	13	12
Zinc	5,000	290	45	200	13
OTHER					
	REGULATORY LIMIT	0.5' BGS Sample # DWH-5a (8' north of pole)	2.0' BGS Sample # DWH-5b (8' north of pole)	0.5' BGS Sample # DWH-7a (near batteries)	2.0' BGS Sample # DWH-7b (near batteries)
pH	None	6.5	7.8	5.5	7.4
Oil and Grease	None	**51,800**	ND	**75,600**	ND

* BGS = Below ground surface ND = None Detected

The soil samples collected north of the power pole and near the batteries revealed high levels of oil and grease (highlighted in red). No other element or compound was detected at levels that exceeded the regulatory threshold value (if available).

TABLE 14

WASTE OIL AREA SAMPLE RESULTS *(Holland Tract)*				
CONSTITUENT	**REGULATORY LIMITS**	**SAMPLE RESULTS** (mg/kg)		
METALS				
	TTLC (mg/kg)	0.5' BGS* Sample # DWH-6a (near 500 gallon tank)	2.0' BGS Sample # DWH-6b1 (near 500 gallon tank)	2.0' BGS Sample # DWH-6b2 (split sample)
Arsenic	500	3	ND	ND
Barium	10,000	47	18	19
Chromium (total)	2,500	11	11	11
Cobalt	8,000	2.2	2.2	2.3
Copper	2,500	14	3	2
Lead	1,000	13	2	2
Molybdenum	3,500	2	ND	ND
Nickel	2,000	10	9	10
Vanadium	2,400	10	17	18
Zinc	5,000	360	12	10
OTHER				
	REGULATORY LIMIT	0.5' BGS Sample # DWH-6a (near 500 gallon tank)	2.0' BGS Sample # DWH-6b1 (near 500 gallon tank)	2.0' BGS Sample # DWH-6b2 (split sample)
pH	None	6.5	8.0	8.0
Oil and Grease	None	**109,000**	**153**	**129**
* BGS = Below ground surface ND = None Detected				

The soil samples collected near the 500-gallon aboveground storage tank revealed high levels of oil and grease, mostly on the surface (highlighted in red). No other element or compound was detected at levels that exceeded the regulatory threshold value (if available).

TABLE 15

WASTE OIL AREA SAMPLE RESULTS *(Holland Tract)*				
CONSTITUENT	**REGULATORY LIMITS**	**SAMPLE RESULTS** (mg/kg)		
METALS				
	TTLC (mg/kg)	0.5' BGS* Sample # DWH-8a (20 feet west of drums)	2.0' BGS Sample # DWH-8b1 (20 feet west of drums)	2.0' BGS Sample # DWH-8b2 (split sample)
Arsenic	500	2	1	1
Barium	10,000	39	28	27
Cadmium	1,000	0.9	ND	ND
Chromium (total)	2,500	10	11	10
Cobalt	8,000	2.3	2.3	2.2
Copper	2,500	8	3	3
Lead	1,000	9	3	3
Nickel	2,000	10	10	10
Vanadium	2,400	12	13	15
Zinc	5,000	43	11	11

TABLE 15 *(continued)*

WASTE OIL AREA SAMPLE RESULTS *(Holland Tract)*				
CONSTITUENT	**REGULATORY LIMITS**	**SAMPLE RESULTS** (mg/kg)		
CHLORINATED PESTICIDES				
	Reporting limit **(mg/kg)**	0.5' BGS Sample # DWH-8a (20 feet west of drums)	2.0' BGS Sample # DWH-8b1 (20 feet west of drums)	2.0' BGS Sample # DWH-8b2 (split sample)
p,p'-DDT	0.006	0.036	ND	ND
OTHER				
	REGULATORY LIMIT	0.5' BGS Sample # DWH-8a (20 feet west of drums)	2.0' BGS Sample # DWH-8b1 (20 feet west of drums)	2.0' BGS Sample # DWH-8b2 (split sample)
pH	None	7.0	7.9	8.0
Oil and Grease	None	**930**	ND	ND
* BGS = Below ground surface ND = None Detected				

The soil samples collected west of the tank and drums revealed elevated levels of oil and grease on the surface (highlighted in red). No other element or compound was detected at levels that exceed the regulatory threshold value (if available).

3.3.4 Background Sample

Per the sampling protocol, a three background samples were collected on Holland Tract. The samples were collected at three separate locations: center of north levee road on north side of tract, by the tidal gauging station along the east side of the tract, and near the gauging station along the east side of the tract, two miles north of Holland Tract Road. Sample results are shown in Table 16.

TABLE 16

BACKGROUND SAMPLE RESULTS *(Holland Tract)*				
CONSTITUENT	**REGULATORY LIMITS**	**SAMPLE RESULTS** (mg/kg)		
METALS				
	TTLC (mg/kg)	0.5' BGS* Sample # DWH-9a (north levee road)	0.5' BGS Sample # DWH-10a (east side by tidal gauge)	0.5' BGS Sample # DWH-11a (east side by gauging station)
Arsenic	500	3	2	2
Barium	10,000	36	24	33
Chromium (total)	2,500	10	8	7
Cobalt	8,000	2.8	2.5	2
Copper	2,500	5	5	3
Lead	1,000	3	2	2
Nickel	2,000	11	10	9
Vanadium	2,400	15	12	11
Zinc	5,000	16	13	11

TABLE 16 *(continued)*

BACKGROUND SAMPLE RESULTS (Holland Tract)				
CONSTITUENT	**REGULATORY LIMITS**	**SAMPLE RESULTS** (mg/kg)		
OTHER				
	REGULATORY LIMIT	0.5' BGS* Sample # DWH-9a (north levee road)	0.5' BGS Sample # DWH-10a (east side by tidal gauge)	0.5' BGS Sample # DWH-11a (east side by gauging station)
pH	None	6.9	6.7	7.1
Oil and Grease	None	ND	ND	ND

* BGS = Below ground surface ND = None Detected

None of the background soil samples detected the presence of an element or compound at a level of concern, nor do they exceed the regulatory threshold value (if available).

3.4 Webb Tract

Authoritative soil samples were collected on Webb Tract at areas where extensive stained soil was observed or suspected. Specifically, samples were collected around fuel and oil storage tanks at the farm headquarters on the west tract border. Samples were also collected near the pumps at the gas well on the south tract border. Background samples were also collected at this tract.

3.4.1 Farm Headquarters: Burn Drums

The Phase I ESA identified three 55-gallon drums north of the maintenance shed. These drums were apparently used for burning trash. A dumpster was observed by the drums that apparently was where ash from the drums was placed. Among the waste in the dumpster, burned heavy equipment oil filters were observed (Photos 20-21). Soil samples were collected in the area between the drums and trash bin. Sample results are shown in Table 17.

Photo 20

Photo 21

TABLE 17

BURN DRUM SAMPLE RESULTS *(Webb Tract)*			
CONSTITUENT	**REGULATORY LIMITS**	**SAMPLE RESULTS** (mg/kg)	
METALS			
	TTLC (mg/kg)	0.5' BGS* Sample # DWW-12a	2.0' BGS Sample # DWW-12b
Arsenic	500	3	1
Barium	10,000	65	14
Cadmium	1,000	0.3	ND
Chromium (total)	2,500	7	4
Cobalt	8,000	1.6	1.7
Copper	2,500	11	1
Lead	1,000	75	2
Nickel	2,000	6	6
Vanadium	2,400	9.4	8.5
Zinc	5,000	440	8
OTHER			
	REGULATORY LIMIT	0.5' BGS Sample # DWW-12a	2.0' BGS Sample # DWW-12b
pH	None	6.6	8.2
Oil and Grease	None	**79,200**	ND

* BGS = Below ground surface ND = None Detected

The soil samples collected between the drums and trash bin revealed elevated levels of oil and grease on the surface (highlighted in red). No other element or compound was detected at levels that exceeded the regulatory threshold value (if available).

3.4.2 Farm Headquarters: Maintenance Building Staining – West Side

The Phase I ESA identified stained soil on the west side of the equipment maintenance building (Photo 22). Samples were collected approximately 20 feet west of the northwest corner of the building. Sample results are shown in Table 18.

Photo 22

TABLE 18

MAINTENANCE BUILDING STAINING SAMPLE RESULTS
(Webb Tract)

CONSTITUENT	REGULATORY LIMITS	SAMPLE RESULTS (mg/kg)	
METALS			
	TTLC (mg/kg)	0.5' BGS* Sample # DWW-13a	2.0' BGS Sample # DWW-13b
Arsenic	500	4	5
Barium	10,000	31	38
Cadmium	1,000	1.3	ND
Chromium (total)	2,500	14	6
Cobalt	8,000	1.8	2.4
Copper	2,500	110	2
Lead	1,000	5	2
Nickel	2,000	7	7
Vanadium	2,400	24	12
Zinc	5,000	140	9
OTHER			
	REGULATORY LIMIT	0.5' BGS Sample # DWW-13a	2.0' BGS Sample # DWW-13b
pH	None	6.0	8.1
Oil and Grease	None	**8,100**	ND

* BGS = Below ground surface ND = None Detected

The soil samples collected on the west side of the maintenance building revealed elevated levels of oil and grease on the surface (highlighted in red). No other samples detected the presence of an element or compound at a level of concern, nor do they exceed the regulatory threshold value (if available).

3.4.3 Farm Headquarters: Maintenance Building Drums

The Phase I ESA identified stained soil on the north side of the equipment maintenance building by open 55-gallon drums and aboveground storage tanks (Photo 23). Samples were collected on the east side of the drums and tanks. Sample results are shown in Table 19.

Photo 23

TABLE 19

MAINTENANCE BUILDING DRUMS SAMPLE RESULTS
(Holland Tract)

CONSTITUENT	REGULATORY LIMITS	SAMPLE RESULTS (mg/kg)		
METALS				
	TTLC (mg/kg)	0.5' BGS* Sample # DWW-14a	2.0' BGS Sample # DWW-14b1	2.0' BGS Sample # DWW-14b2 (split sample)
Arsenic	500	3	3	2
Barium	10,000	31	16	14
Chromium (total)	2,500	6	5	5
Cobalt	8,000	1.8	1.6	1.6
Copper	2,500	7	1	
Lead	1,000	11	2	1
Nickel	2,000	6	5	5
Vanadium	2,400	8.7	7.2	7.3
Zinc	5,000	390	12	8
OTHER				
	REGULATORY LIMIT	0.5' BGS Sample # DWW-14a	2.0' BGS Sample # DWW-14b1	2.0' BGS Sample # DWW-14b2 (split sample)
pH	None	5.9	7.7	7.9
Oil and Grease	None	**125,000**	**1,230**	**1,350**

* BGS = Below ground surface ND = None Detected

The soil samples collected on by the oil drums and tanks revealed high levels of oil and grease (highlighted in red). No other element or compound was detected at levels that exceeded the regulatory threshold value (if available).

3.4.4 Farm Headquarters: Maintenance Building Fuel Tanks

The Phase I ESA identified stained soil on the north side of the equipment maintenance building under an aboveground diesel fuel tank (Photo 24). Additional staining was identified in the area surrounding a fuel tank in the same location (Photo 25). Soil samples were collected under the tank. Sample results are shown in Table 20.


Photo 24


Photo 25

TABLE 20

FUEL TANKS SAMPLE RESULTS
(Webb Tract)

CONSTITUENT	REGULATORY LIMITS	SAMPLE RESULTS (mg/kg)			
METALS					
	TTLC (mg/kg)	0.5' BGS* Sample # DWW-15a (under fuel tank valve)	2.0' BGS Sample # DWW-15b (under fuel tank valve)	0.5' BGS Sample # DWW-16a (north of fuel tank)	2.0' BGS Sample # DWW-16b (north of fuel tank)
Arsenic	500	4	37	7	2
Barium	10,000	36	21	48	33
Chromium (total)	2,500	6	6	6	6
Cobalt	8,000	1.6	2	2.1	2.3
Copper	2,500	3	1	3	2
Lead	1,000	6	2	3	2
Nickel	2,000	6	6	6	7
Vanadium	2,400	9.2	8.2	11	9.7
Zinc	5,000	390	10	17	9
PETROLEUM HYDROCARBONS					
	Reporting limit (mg/kg)	0.5' BGS Sample # DWW-15a (under fuel tank valve)	2.0' BGS Sample # DWW-15b (under fuel tank valve)	0.5' BGS Sample # DWW-16a (north of fuel tank)	2.0' BGS Sample # DWW-16b (north of fuel tank)
Xylene	0.013	ND	ND	0.17	0.013
SEMIVOLATILE ORGANIC COMPOUNDS					
	Reporting limit (mg/kg)	0.5' BGS Sample # DWW-15a (under fuel tank valve)	2.0' BGS Sample # DWW-15b (under fuel tank valve)	0.5' BGS Sample # DWW-16a (north of fuel tank)	2.0' BGS Sample # DWW-16b (north of fuel tank)
Naphthalene	50	ND	ND	ND	0.45
OTHER					
	REGULATORY LIMIT	0.5' BGS Sample # DWW-15a (under fuel tank valve)	2.0' BGS Sample # DWW-15b (under fuel tank valve)	0.5' BGS Sample # DWW-16a (north of fuel tank)	2.0' BGS Sample # DWW-16b (north of fuel tank)
pH	None	7.3	7.8	7.4	8.2
Oil and Grease	None	**51,800**	ND	**75,600**	ND

* BGS = Below ground surface ND = None Detected

The soil samples collected under the fuel tank fill valve and north of the diesel fuel tank revealed high levels of oil and grease on the surface (highlighted in red). Samples also detected levels of xylene and naphthalene. No other element or compound was detected at levels that exceeded the regulatory threshold value (if available).

3.4.5 Gas Well Facility

The Phase I ESA identified a gas well facility situated along the south levee road approximately two miles west of the pumping station (Photo 26). Stained soil was observed under the elevated pump structure. Samples were collected is this location. Sample results are shown in Table 21.

Photo 26

TABLE 21

GAS WELL SAMPLE RESULTS *(Webb Tract)*				
CONSTITUENT	**REGULATORY LIMITS**	**SAMPLE RESULTS** (mg/kg)		
METALS				
	TTLC (mg/kg)	0.5' BGS* Sample # DWW-20a1	0.5' BGS Sample # DWW-20a2 (split sample)	2.0' BGS Sample # DWW-20b
Arsenic	500	5	4	13
Barium	10,000	1,500	1,500	250
Chromium (total)	2,500	21	17	49
Cobalt	8,000	5.1	5.5	8.1
Copper	2,500	11	12	30
Lead	1,000	9	9	7
Mercury	20	0.15	0.21	0.04
Nickel	2,000	21	22	45
Vanadium	2,400	21	23	91
Zinc	5,000	52	58	49
OTHER				
	REGULATORY LIMIT	0.5' BGS Sample # DWW-20a1	0.5' BGS Sample # DWW-20a2 (split sample)	2.0' BGS Sample # DWW-20b
pH	None	6.6	6.6	5.4
Oil and Grease	None	**67,200**	**63,000**	**870**
* BGS = Below ground surface ND = None Detected				

The soil samples collected under the well pump revealed high levels of oil and grease (highlighted in red). Elevated levels of barium were also detected. No other element or compound was detected at levels that exceeded the regulatory threshold value (if available).

3.4.6 Background Samples

Per the sampling protocol, a three background samples were collected on Webb Tract. The samples were collected at three separate locations: northernmost tip of tract, one-half mile west of residence on eastern point of tract, and in the field northeast of the gas well. Sample results are shown in Table 22.

TABLE 22

BACKGROUND SAMPLE RESULTS *(Webb Tract)*				
CONSTITUENT	**REGULATORY LIMITS**	**SAMPLE RESULTS** (mg/kg)		
METALS				
	TTLC (mg/kg)	0.5' BGS* Sample # DWW-18a (north tip of tract)	0.5' BGS Sample # DWW-19a (east end of tract)	0.5' BGS Sample # DWW-21a (north of gas well)
Arsenic	500	5	7	18
Barium	10,000	90	97	260
Chromium (total)	2,500	41	30	48

TABLE 22 *(continued)*

BACKGROUND SAMPLE RESULTS *(Webb Tract)*				
CONSTITUENT	**REGULATORY LIMITS**	**SAMPLE RESULTS** (mg/kg)		
METALS				
	TTLC (mg/kg)	0.5' BGS* Sample # DWW-18a (north tip of tract)	0.5' BGS Sample # DWW-19a (east end of tract)	0.5' BGS Sample # DWW-21a (north of gas well)
Copper	2,500	24	24	45
Lead	1,000	6	8	11
Mercury	20	0.09	0.09	0.06
Molybdenum	3,500	ND	1	3
Nickel	2,000	59	32	47
Vanadium	2,400	42	43	100
Zinc	5,000	54	47	51
CHLORINATED PESTICIDES				
	Reporting limit **(mg/kg)**	0.5' BGS Sample # DWW-18a (north tip of tract)	0.5' BGS Sample # DWW-19a (east end of tract)	0.5' BGS Sample # DWW-21a (north of gas well)
Diedrin	0.3	ND	ND	0.058
OTHER				
	REGULATORY LIMIT	0.5' BGS Sample # DWW-18a (north tip of tract)	0.5' BGS Sample # DWW-19a (east end of tract)	0.5' BGS Sample # DWW-21a (north of gas well)
pH	None	5.7	5.4	4.5
Oil and Grease	None	ND	36	ND
* BGS = Below ground surface ND = None Detected				

None of the background soil samples detected the presence of an element or compound at a level of concern, nor do they exceed the regulatory threshold value (if available). However, diedrin, a chlorinated pesticide, was detected in the background sample collected in the field north of the gas well.

4.0 QUALITY ASSURANCE / QUALITY CONTROL

Duplicate samples, equipment blanks, and field blanks were collected during the sampling process to assess the precision of field collection techniques and laboratory sample handling. Such measures also help detect cross-contamination between sample locations.

The laboratory quality assurance/quality control (QA/QC) measures and chain-of-custody documents are found in Appendix E.

It should be noted that for ease of discussion in this section, only those sample analytes which were detected are displayed. In order to ease reporting and discussion, those samples which had no analyte detected were not displayed. (For example, no analytes were detected in any of the background samples. Therefore, no table of results is displayed in Section *4.2 Equipment Blanks.*) See Appendix B for the sample results summary. Appendix C contains the original Caltest analytical results.

4.1 Duplicate Soil Samples

Duplicate soil samples were collected at each island and tract. The duplicate samples serve as a QA/QC measure to assess the precision of the field collection process and the analytical laboratory (State 1995). Duplicate soil samples were prepared by placing a collected soil sample in a clean stainless steel bucket, homogenizing the soil with a clean stainless steel trowel or certified clean disposable scoop, and dividing the sample into two sample jars. Tables 23-26 illustrate the duplicate samples and their results.

Note that some samples and their duplicates were not exactly equal. The extent to which this difference is acceptable is defined by SW-846 Method 6020. Method 6020 specifies the following two expectations: 1) $\leq$ 20 Relative Percent Difference for analytes whose concentrations exceed the instrument detection level by a factor of >100; or 2) when the analyte concentrations are less than this factor of 100, a larger RPD is allowed (Gump).

TABLE 23

DUPLICATE SAMPLE ANALYSES
(Holland Island)

METALS

	Reporting Limit (mg/kg)	DWH-6b1	DWH-6b2	RPD	DWH-8b1	DWH-8b2	RPD
Arsenic	1	ND	ND	N/A	1	2	67
Barium	1	18	19	5	28	27	4
Chromium (total)	1	11	11	0	11	10	10
Cobalt	0.4	2.2	2.3	4	2.3	2.2	4

TABLE 23 *(continued)*

DUPLICATE SAMPLE ANALYSES *(Holland Island)*							
METALS							
Copper	1	3	3	0	3	3	0
Lead	1	2	2	0	3	3	0
Nickel	1	9	10	10	10	10	0
Vanadium	0.4	17	18	6	13	13	0
Zinc	4	12	10	18	11	11	0
OTHER							
Oil and Grease	None	153	129	17	ND	ND	N/A

RPD = Relative Percent Difference = $[(D_1-D_2)/[(D_1+D_2)/2]] \times 100$
ND = None Detected
N/A = Not Applicable

The RPD for duplicate samples collected at Holland Island are well below 20. Only the RPD of 67 for arsenic exceeds this difference. However, the analyte concentrations are 1 mg/kg, and 2 mg/kg, which are far less than 100 times the instrument detection level of 1. According to the Method 6020 guidelines, the reporting difference is acceptable.

TABLE 24

DUPLICATE SAMPLE ANALYSES *(Webb Tract)*							
METALS							
	Reporting Limit (mg/kg)	DWW-14b1	DWW-14b2	RPD	DWW-20a1	DWW-20a2	RPD
Arsenic	1	3	2	40	5	4	22
Barium	1	16	14	13	1500	1500	0
Chromium (total)	1	5	5	0	21	17	21
Cobalt	0.4	1.6	1.6	0	5.1	5.5	8
Copper	1	1	ND	200	11	12	9
Lead	1	2	1	67	9	9	0
Mercury	0.02	ND	ND	N/A	0.15	0.21	33
Nickel	1	5	5	0	21	22	5
Vanadium	0.4	7.2	7.3	1	21	23	9
Zinc	4	12	8	40	52	58	11
OTHER							
Oil and Grease	None	1,230	1,350	9	67,200	63,000	7

RPD = Relative Percent Difference = $[(D_1-D_2)/[(D_1+D_2)/2]] \times 100$
ND = None Detected
N/A = Not Applicable

The RPD for most of the duplicate samples collected at Webb Tract are well below 20. At least one RPD value exceeded 20 for arsenic, chromium, copper, lead, mercury, and zinc. However, the analyte concentrations for each of these are far less than 100 times their respective instrument detection levels. According to the Method 6020 guidelines, the reporting differences for duplicate samples at Webb Tract are acceptable.

TABLE 25

DUPLICATE SAMPLE ANALYSES *(Bacon Island)*							
METALS							
	Reporting Limit (mg/kg)	DWB-24b1	DWB-24b2	RPD	DWB-28b1	DWB-28b2	RPD
Arsenic	1	4	5	22	5	4	22
Barium	1	42	50	17	110	110	0
Chromium (total)	1	6	6	0	27	26	4
Cobalt	0.4	1.6	1.7	6	7.8	7.7	1
Copper	1	4	4	0	22	22	0
Lead	1	1	2	67	15	14	7
Mercury	0.02	ND	ND	NA	0.06	0.06	0
Molybdenum	1	3	3	0	2	1	67
Nickel	1	9	10	11	29	29	0
Vanadium	0.4	11	13	17	42	41	2
Zinc	4	5	7	33	280	270	4
AROMATIC & TOTAL PURGEABLE PETROLEUM HYDROCARBONS							
Xylenes (total)	0.013	ND	ND	NA	0.10	0.16	46
OTHER							
Oil and Grease	None	144	132	9	35,500	35,300	1

RPD = Relative Percent Difference = $[(D_1-D_2)/[(D_1+D_2)/2]] \times 100$
ND = None Detected
N/A = Not Applicable

The RPD for most of the duplicate samples collected at Bacon Island are well below 20. At least one RPD value exceeded 20 for arsenic, lead, molybdenum, and zinc. However, the analyte concentrations for each of these are far less than 100 times their respective instrument detection levels. As with samples collected at Webb tract, according to the Method 6020 guidelines, the reporting differences for duplicate samples at Bacon Island are acceptable.

TABLE 26

DUPLICATE SAMPLE ANALYSES *(Bouldin Island)*				
METALS				
	Reporting Limit (mg/kg)	DWL-30a1	DWL-30a2	RPD
Arsenic	1	4	4	0
Barium	1	110	110	0
Chromium (total)	1	20	20	0
Cobalt	0.4	8.5	8.8	3
Copper	1	22	22	0
Lead	1	20	17	16
Mercury	0.02	0.08	0.15	61
Nickel	1	24	24	0
Vanadium	0.4	32	ND	200
Zinc	4	190	32	142
AROMATIC & TOTAL PURGEABLE PETROLEUM HYDROCARBONS				
Toluene	0.013	0.016	0.018	12
Xylenes (total)	0.013	0.045	0.041	9

TABLE 26 *(continued)*

DUPLICATE SAMPLE ANALYSES *(Bouldin Island)*				
OTHER				
	Reporting Limit (mg/kg)	DWL-30a1	DWL-30a2	RPD
Oil and Grease	None	84,600	85,800	1

RPD = Relative Percent Difference = $[(D_1-D_2)/[(D_1+D_2)/2]] \times 100$
ND = None Detected
N/A = Not Applicable

The RPD for duplicate samples collected at Bouldin Island are well below 20. Only RPD values that exceed 20 are those for mercury, vanadium, and zinc. However, the detected concentrations for these three analytes, although elevated, are less than 100 times their respective instrument detection levels. According to the Method 6020 guidelines, the reporting difference is acceptable.

4.2 Equipment Blanks

Equipment blanks were collected at Holland Island and Webb Tract as another QA/QC measure to help check for possible contamination from the field equipment used to sample below the stain. This blank was collected by running deionized water over the sample auger. The rinseate was collected in a stainless steel bucket, and then poured through a stainless steel funnel into an amber glass bottle containing the appropriate preservative. These samples were analyzed for Title 22 heavy metals, including Chromium VI. No analytes were detected in the equipment blank samples.

4.3 Field Blanks

Four field blanks were collected as a QA/QC measure to check for possible contamination from sampling procedures and handling. Field blanks were collected by pouring deionized water into an amber glass bottle containing the appropriate preservative. Detection in this sample would indicate possible contamination of soil samples by the deionized water used throughout the sampling process, or contamination because of improper handling of samples. Samples were analyzed for aromatic and total purgeable petroleum hydrocarbons, which are some of the main ingredients in gasoline. No petroleum hydrocarbons were detected in any of the field blank samples.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The following section discusses the conclusions and recommendations made by SAS staff based on the information obtained during the Phase I and Phase II investigations.

5.1 Stained Soil

Stained soils under and around equipment maintenance and storage facilities, fuel tanks, and oil storage tanks was observed and sampled. Laboratory results confirmed the presence of elevated levels of oil and grease. No other elements or compounds were detected at levels that exceeded established regulatory threshold values.

Based on the results of the Phase II ESA sampling, SAS recommends further investigation of the identified "hot spot" areas to better delineate the extent of contamination. Further investigation may include more invasive subsurface soil sampling, surface water and groundwater sampling, and environmental fate studies for each of the contaminants of concern. SAS also recommends that any contaminated soil at or near water supply well sites be removed and properly disposed of, or remediated, depending on the extent of contamination.

5.2 Gas Wells

SAS recommends that all measures be taken to indemnify the State from any liability associated with future hazardous substance contamination or remedial actions associated with the natural gas wells that are present throughout the Site. At this time, these gas wells and the parcels on which they are situated may not be part of the land acquisition for the Project. Such measures may include establishing baseline soil and groundwater sampling data for the properties surrounding the gas wells or inserting indemnification clauses in each of the proposed purchase agreements.

6.0 REFERENCES AND PERSONS CONSULTED

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7.0 SIGNATURES

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Reviewed by:

Derrick J. Adachi, Chief
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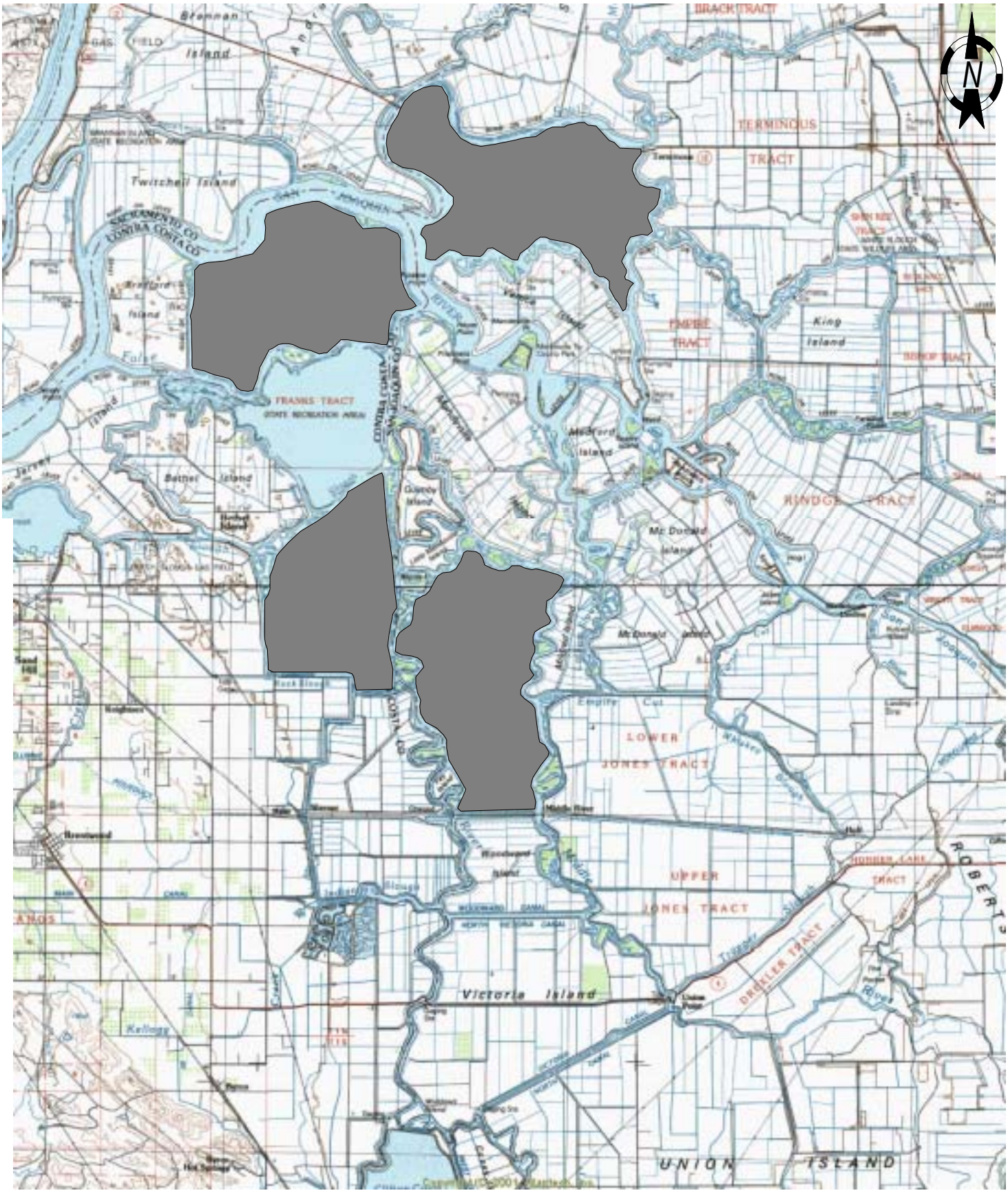
REA-06706

FIGURES



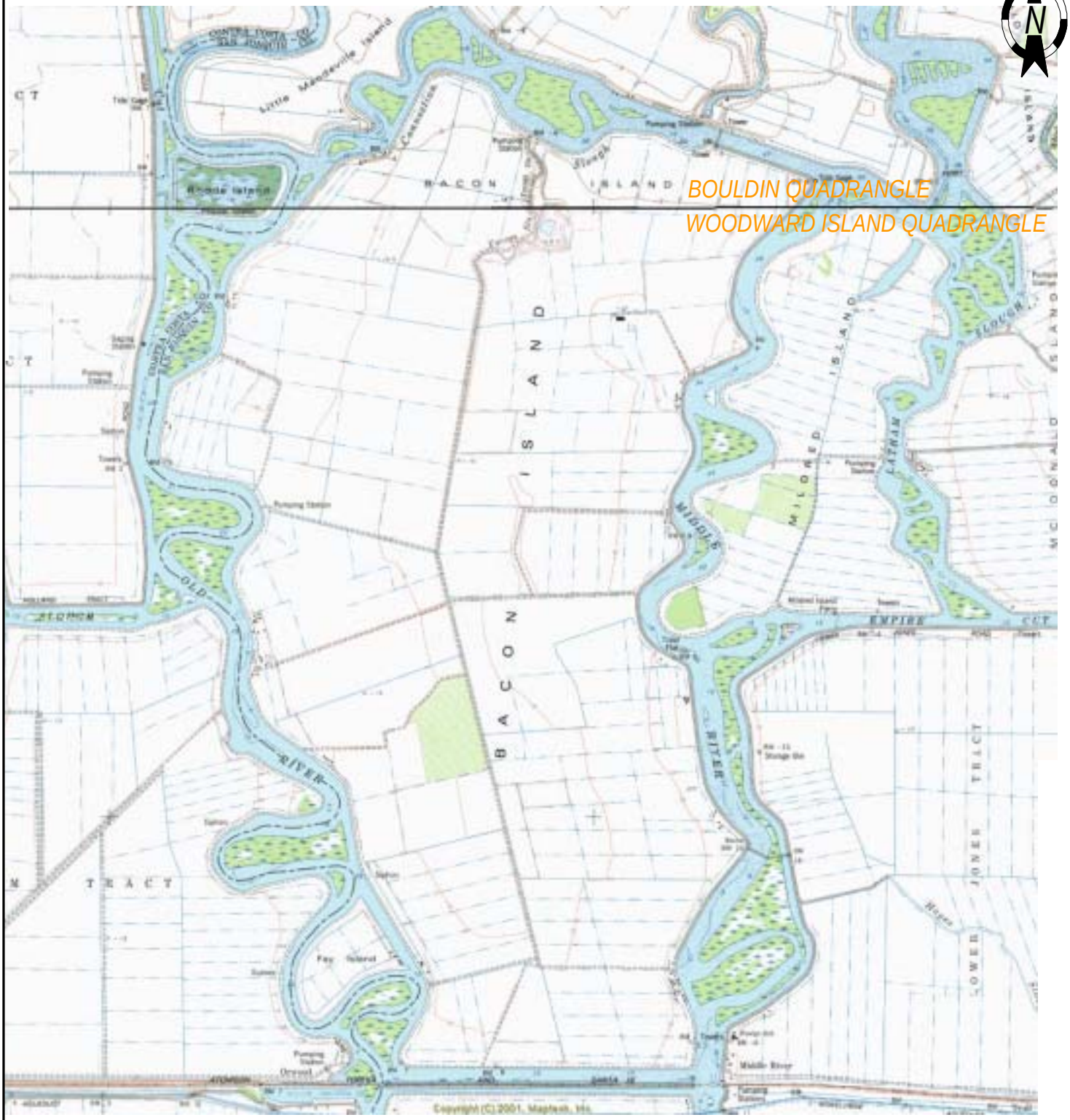
0 1 2 3 4
MILES

SITE
CALIF.

= APPROXIMATE SITE LOCATION

SOURCE:
30 x 60 USGS TOPOGRAPHIC MAP
STOCKTON and LODI, CALIFORNIA QUADRANGLES
1:100,000 SCALE

FIGURE 1
PROJECT SITE LOCATION

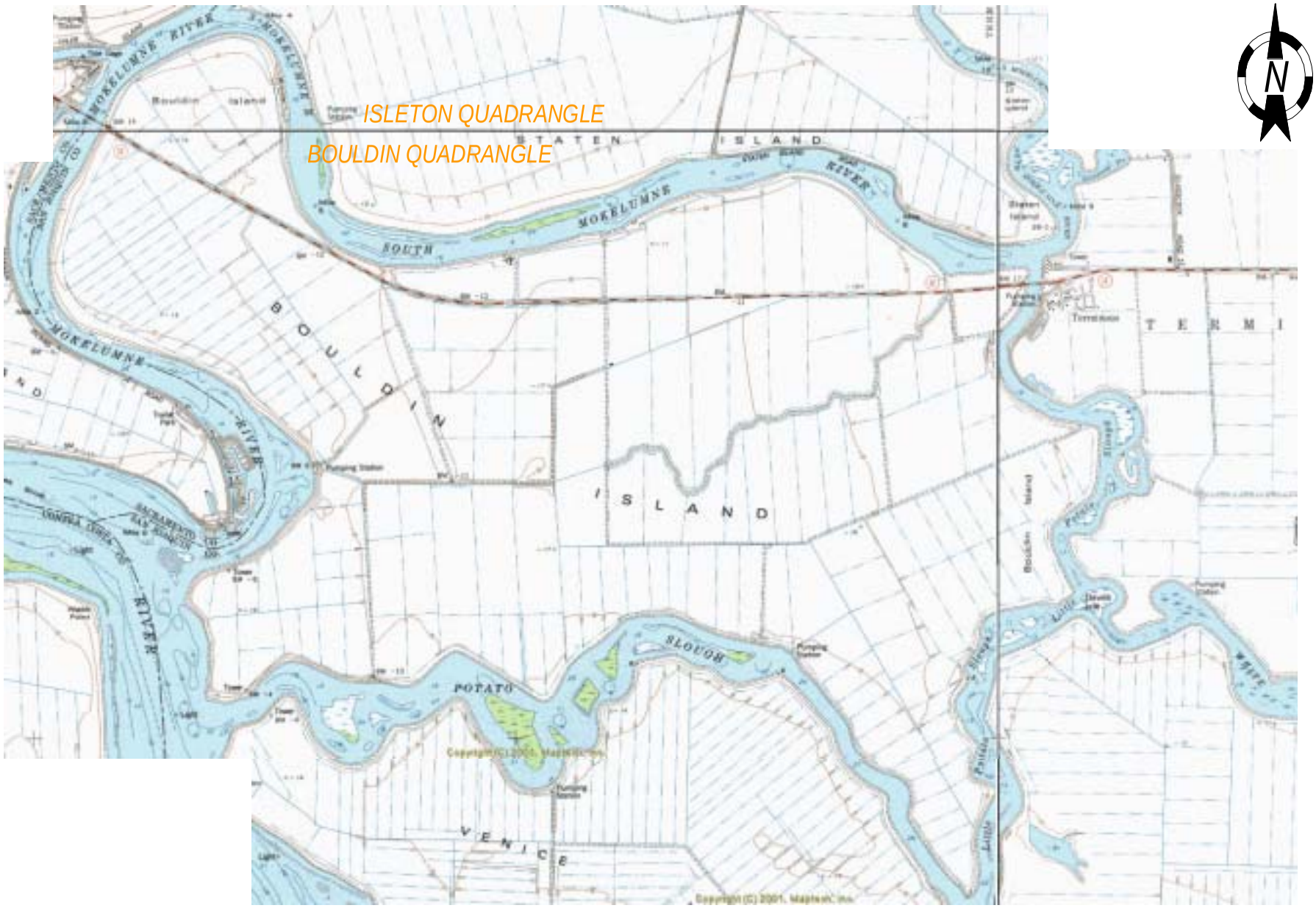


0 1/2 1
MILE

SITE
CALIF.

SOURCE:
7.5 MINUTE USGS TOPOGRAPHIC MAP
BOULDIN & WOODWARD ISLAND, CA. QUADRANGLES
1:24,000 SCALE

FIGURE 2
BACON ISLAND
SAN JOAQUIN COUNTY

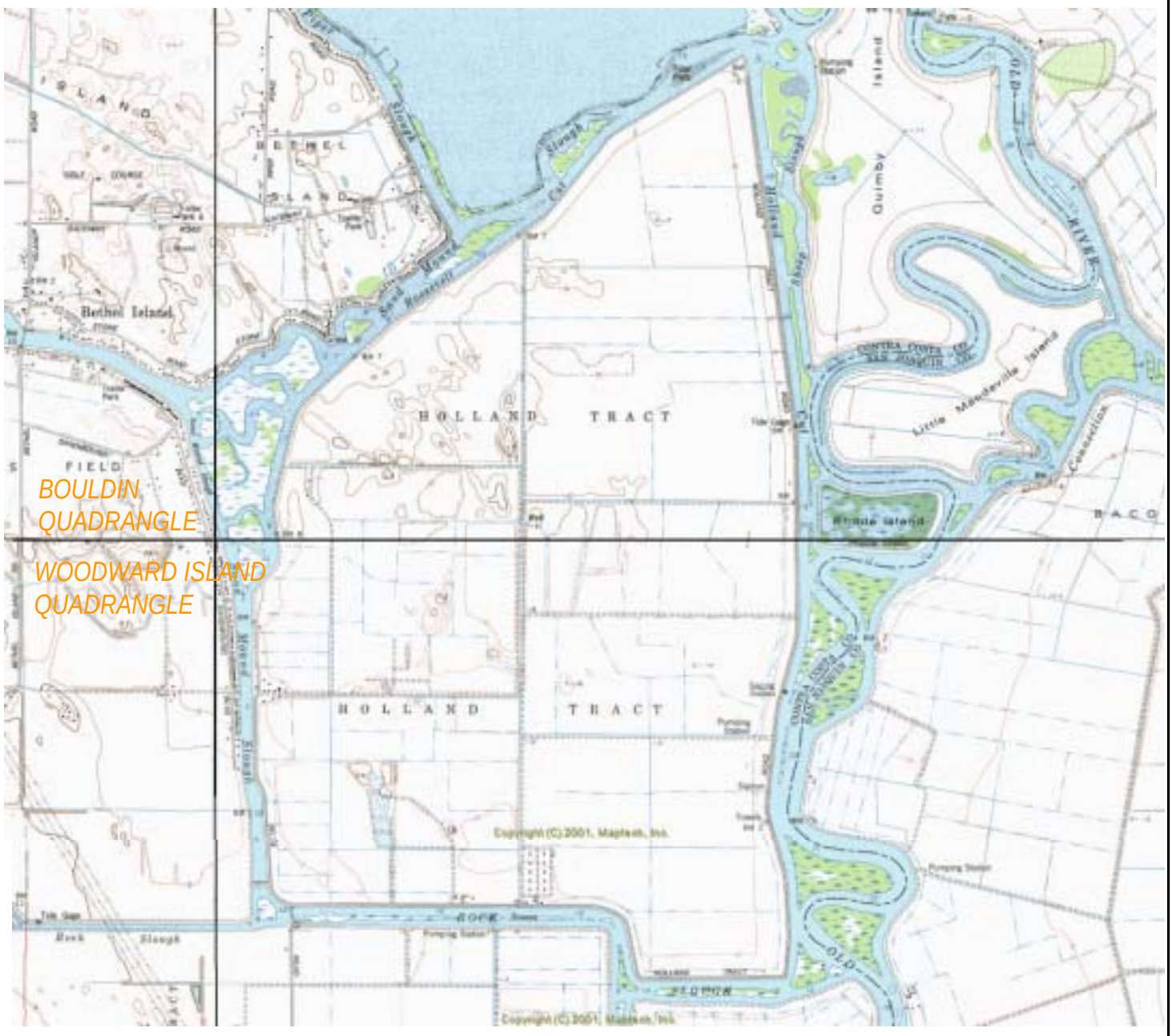


0 1/2 1

MILE

SOURCE:
7.5 MINUTE USGS TOPOGRAPHIC MAP
BOULDIN, ISLETON, & TERMINOUS, CA. QUADRANGLES
1:24,000 SCALE

FIGURE 3
BOULDIN ISLAND
SAN JOAQUIN COUNTY, CALIFORNIA



0 1/2 1
MILE

SITE
CALIF.

SOURCE:
7.5 MINUTE USGS TOPOGRAPHIC MAP
BOULDIN & WOODWARD ISLAND, CA. QUADRANGLES
1:24,000 SCALE

FIGURE 4
HOLLAND TRACT
CONTRA COSTA COUNTY

0 1/2 1

MILE

SOURCE:
7.5 MINUTE USGS TOPOGRAPHIC MAP
BOULDIN & JERSEY ISLAND, CA. QUADRANGLES
1:24,000 SCALE

FIGURE 5
WEBB TRACT
CONTRA COSTA COUNTY, CALIFORNIA

APPENDIX A

SAMPLING PLAN
DELTA WETLANDS / IN-DELTA STORAGE

All sampling designed in this Sampling Plan is to obtain representative samples and is in accordance with procedures specified in "Test Methods for Evaluating Solid Waste, 3rd edition, SW-846, U.S. EPA, September 1986".

Background

The acquisition of four islands within the Sacramento/San Joaquin Delta is currently under consideration by DWR. The islands are Webb Tract, Bouldin Island, Holland Tract, and Bacon Island. It is proposed that two of the islands be flooded for water storage and two be used as mitigation land. This project is part of a comprehensive feasibility study associated with CALFED's Delta Wetlands Project.

The *modified* Phase I Environmental Site Assessment for the project site reported the presence of numerous waste oil drums and farm equipment maintenance areas. Many of such facilities had soil staining around them. Numerous water wells are at the Site which are potential conduits for groundwater contamination. It was recommended that the presence, nature, and extent of soil contamination be further investigated.

Objectives

The purpose of sampling at the site is to determine the presence or absence of contamination in the soil at the Site, and to make preliminary determinations regarding the nature and extent of any waste encountered. Soil samples will be collected to determine if any contaminants are present at concentrations exceeding regulatory threshold levels. Background samples will also be collected to determine the presence and concentration of any contaminants of concern in the general area surrounding the Site. Photographs will be taken to document the sampling event.

Personnel

Sampling will be conducted under the direction of Derrick J. Adachi, REA, Chief of the Site Assessment Section. Sampling will be performed by James W. Gleim, REA, Environmental Scientist Range C, Christopher Huitt, Environmental Scientist Range B, and Donald Guy, Environmental Scientist Range B.

Health and Safety

A Site Safety Plan for sampling activities was prepared and is included as Appendix A of this Sampling Plan. Appropriate personal protective equipment will be used to protect worker health and safety during the sampling event.

Rationale for Sampling Methods

A. **Number of Samples Collected**

DWR will collect a maximum of **130** soil samples from suspected areas of contamination surrounding the oil well facilities, above-ground storage tanks, and water pump facilities. A number of the soil samples will be collected from the same location, but from various depths. These samples will aid in determining the nature and extent of contamination.

B. Sampling Strategy

All samples collected for contaminant levels shall be done in accordance with the following requirements:

1. Grab Sampling:

Grab samples will be performed at the site, which dictates that the sampling and analysis of all samples collected should be identical so that bias is minimized. Soil samples will be collected at **0.5**, **2.0**, and **4.0** feet below ground surface. Samples will be collected at locations where soil contamination is suspected to be at the highest concentration within each individual area of concern.

(a) Sampling locations will be identified and recorded.
(b) Samples shall be collected using stainless steel spoons, a stainless steel shovel, and stainless steel hand or power auger flights, extensions, and bits. Each sample will be placed into a Level 2 pre-cleaned sample jar, sealed, labeled, and stored in a cooler with ice.
(c) All sampling equipment that was in direct contact with the soil shall be decontaminated prior to use at another sampling location.

2. Duplicates

As part of field QA/QC measures, **4**duplicate samples shall be collected. Where the number of duplicate samples is a fractional number, the number of duplicate samples collected shall be rounded up to the next whole number. The duplicate sample collected shall be submitted as a "blind duplicate." Sample identification numbers for the duplicate will be unique and indistinguishable from the other samples. The duplicate will be noted the field notebook for referencing in the report of analysis.

3. Equipment Blank

As part of field QA/QC measures, **2** equipment blank shall be collected on the same day as sample collection. The equipment blank shall be taken by rinsing lab grade deionized water on the sample collection equipment (shovel and spoon) and collecting this rinseate in a Level 2 precleaned sample container.

4. Travel Blank (NONE)

As part of field QA/QC measures, a travel blank will be obtained when the empty sample containers are picked up from E.S. Babcock and Sons, Inc. (Babcock), the certified analytical laboratory performing the analyses on the samples collected from the Site. This travel blank, consisting of sample containers filled
with deionized water by Babcock staff, will be placed in an ice chest upon receipt and will be kept with the collected samples for the duration of the sampling event. The travel blank will be submitted to Babcock along with the collected samples for analysis.

5. Background Samples

At least **7** background soil samples shall be collected at locations where the ground surface has not been farmed and is in a relatively natural and undisturbed state. The samples will be collect up-gradient from the Site. The background samples shall be taken at a depth of at least 3 inches below ground surface. Background samples shall be collected using the same equipment and methodology as all other samples. Background samples may be identified as such.

6. Sampling Methodology

a. Equipment: Any combination of disposable plastic bags, a stainless steel shovel, stainless steel spoons, stainless steel hand auger, slide hammer, or power auger with its respective stainless steel extensions, flights, bits, and sampling sleeves will be used to collect samples.

b. Decontamination: Reusable sampling equipment shall be cleaned prior to the collection of each sample. Decontamination shall be conducted by the following procedure:

1. Shovels and spoons shall have gross contaminants removed by hand.
2. Equipment shall be thoroughly washed with non-phosphate detergent and deionized water.
3. Triple rinse with deionized water.

c. Containers: All soil samples will be collected in 8-ounce borosilicate glass wide-mouth jars with Teflon closures. Water samples to be analyzed for Title 22 metals will be collected in 1-quart plastic containers preserved in advance with HNO_3. Water samples to be analyzed for pH will be collected in 1-quart plastic containers. Water samples to be analyzed for TPH will be collected in 1-liter amber glass jars with Teflon closures. Water samples to be analyzed for the volatile and semi-volatile organics scan will be collected in 2-liter amber glass jars with Teflon closures. Water samples to be analyzed for volatile organic compounds will be collected in two duplicate 40-ml amber glass vials with Teflon closures preserved in advance with HCl. Water samples to be analyzed for carbamate pesticides will be collected in 1-liter amber glass jars with Teflon closures. Care will be exercised to avoid cross-contamination from equipment or gloves.

d. Duplicates: Samples will be collected following this procedure:

? placing a collected soil sample into a new disposable plastic bag
? homogenizing the sample by hand
? dividing the sample into two sample jars

7. Chain of Custody

All samples will be sealed and labeled upon collection. The sample number, date, time, location and name of the sampler will be recorded. In addition, the samples will be entered on Chain of Custody forms before delivery to the

laboratory. The samples will be stored and transported in a container cooled with ice packs. The cooler containing the samples and Chain of Custody will be delivered to Babcock, a certified analytical laboratory.

C. Analysis

Samples collected will undergo the following analyses:

SAMPLE ANALYSIS	METHOD
pH	EPA Method 9045C
TTLC - Title 22 Metals[+]	EPA Methods 6010B/7471A/200.7
BTEX & MTBE (Benzene, Toluene, Ethylbenzene, Xylene)	EPA Method 8260
Oil/Grease	EPA Method 1664
Organochlorine Pestcides	EPA Method 8081A
Polychlorinated Biphenyls	EPA Method 8082
Polynuclear Aromatic Hydrocarbons	EPA Method 8100
Organophosphorous Compounds	EPA Method 8141A
Polyaeromatic Hydrocarbons	EPA Method 8015/8020A
Semivolatile Organic Compounds	EPA Method 8270

[+] [17] Title 22 Metals plus Hexavalent Cr (VI)
[Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Hg, Mo, Ni, Se, Ag, Tl, V, Zn]

After initial results are received, DWR may request that the following analysis be performed on the samples collected:

SAMPLE ANALYSIS	METHOD
STLC - Waste Extraction Test [++]	EPA Method 6010/6020 (for metals only) [+++]

[++] Waste Extraction Test for metals - Title 22 CCR, Div 4.5, Chapter 11, Appendix 2, Section 66261.126 et al

[+++] As a general rule, total concentrations of a metal that exceed 10 times the STLC have the potential to exceed the Soluble Threshold Limit Concentration. Appropriate and equivalent analytical methods may be substituted as necessary by the analytical laboratory.

References

Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., November 1986, U.S. EPA, Office of Solid Waste and Emergency Response, Washington, D.C..

HML Users Manual, October 1990, California Department of Health Services, Hazardous Materials Laboratory, Berkeley, CA.

Statistical Analysis of Ground-Water Monitoring Data At RCRA Facilities, Interim Final Guidance, April 1989, U.S. EPA, Office of Solid Waste and Emergency Response, Washington, D.C..

Preliminary Endangerment Assessment Guidance Manual (A guidance manual for evaluating hazardous substance release sites.), January 1994, California Department of Toxic Substance Control, Sacramento, CA.

APPENDIX B

DELTA WETLANDS / IN-DELTA STORAGE, PHASE II ESA

SOIL SAMPLE RESULTS

METALS

Analyte	Reporting Limit (Soil) (mg/kg)	Reporting Limit (Water) (mg/L)	TTLC* for Metals (mg/kg)	DWB-22a (mg/kg)	DWB-22ah (mg/kg)	DWB-23a (mg/kg)	DWB-23ah (mg/kg)	DWB-24b1 (mg/kg)	DWB-24bh1 (mg/kg)	DWB-24b2 (mg/kg)	DWB-24bh2 (mg/kg)	DWB-25a (mg/kg)	DWB-25ah (mg/kg)	DWB-25b (mg/L)	DWB-25bh (mg/L)	DWB-26a (mg/L)	DWB-26ah (mg/kg)	DWB-26b (mg/kg)	DWB-26bh (mg/kg)	DWB-27a (mg/kg)	DWB-27ah (mg/kg)	DWB-28a (mg/kg)	DWB-28ah (mg/kg)	DWB-28b1 (mg/kg)	DWB-28bh1 (mg/kg)	DWB-28b2 (mg/kg)	DWB-28bh2 (mg/kg)	DWB-29a (mg/kg)	DWB-29ah (mg/kg)	DWB-29b (mg/kg)	DWB-29bh (mg/kg)	DWB-29EB (mg/kg)
Antimony	2	0.006	500	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Arsenic	1	0.002	500	**6**		**11**		**4**		**5**		**8**		**14**		**12**		**3**		**10**		**8**		**5**		**4**		**5**		**11**		
Barium	1	0.1	10,000	**130**		**150**		**42**		**50**		**120**		**82**		**120**		**28**		**140**		**250**		**110**		**110**		**130**		**120**		
Beryllium	0.2	0.001	75	ND		ND		ND		ND		ND		ND		ND		ND		**0.5**		ND		ND		ND		ND		ND		
Cadmium	0.2	0.001	1000	ND		ND		ND		ND		ND		ND		ND		ND		ND		**0.05**		ND		ND		ND		ND		
Hexavalent Chromium	0.5	0.01			ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	ND
Total Chromium	1	0.01	2,500	**31**		**33**		**6**		**6**		**26**		**12**		**22**		**3**		**37**		**12**		**27**		**26**		**19**		**24**		
Cobalt	0.4	0.01	8,000	**9**		**10**		**1.6**		**1.7**		**8.3**		**6.9**		**4.8**		**1.2**		**8.9**		**38**		**7.8**		**7.7**		**5.3**		**5.5**		
Copper	1	0.01	2,500	**21**		**25**		**4**		**4**		**20**		**9**		**20**		**2**		**29**		**96**		**22**		**22**		**130**		**27**		
Lead	1	0.005	1,000	**12**		**19**		**1**		**2**		**16**		**3**		**9**		**1**		**270**		**0.06**		**15**		**14**		**52**		**17**		
Mercury	0.02	0.001	20	**0.03**		**0.08**		ND		ND		**0.05**		**0.03**		**0.03**		ND		**0.1**		**5**		**0.06**		**0.06**		**0.05**		**0.07**		
Molybdenum	1	0.01	3,500	**2**		**3**		**3**		**3**		**2**		**5**		**4**		**1**		**3**		**39**		**2**		**1**		**3**		**4**		
Nickel	1	0.01	2,000	**39**		**46**		**9**		**10**		**41**		**24**		**26**		**6**		**42**		ND		**29**		**29**		**23**		**24**		
Selenium	2	0.005	100	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Silver	0.6	0.01	500	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Thallium	2	0.001	700	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Vanadinium	0.4	0.01	2,400	**47**		**52**		**11**		**13**		**44**		**29**		**44**		**7.3**		**60**		**31**		**42**		**41**		**24**		**46**		
Zinc	4	0.01	5,000	**55**		**160**		**5**		**7**		**240**		**19**		**55**		**7**		**53**		**290**		**280**		**270**		**520**		**43**		

ND: None Detected at Reporting Limit

mg/kg: millligrams/kilogram = parts per million

µg/L: micrograms/liter = parts per billion

*Total Threshold Limit Concentration given in Title 22 California Code of Regulations, secion 66261.24

DELTA WETLANDS / IN-DELTA STORAGE, PHASE II ESA

SOIL SAMPLE RESULTS

pH, Chlorinated Pesticides, PCBs, PAH, Oil & Grease

Analyte	Reporting Limit (soil) (units)	DWB-22a (units)	DWB-22ah (units)	DWB-23a (units)	DWB-23ah (units)	DWB-24b1 (units)	DWB-24bh1 (units)	DWB-24b2 (units)	DWB-24bh2 (units)	DWB-25a (units)	DWB-25ah (units)	DWB-25b (units)	DWB-25bh (units)	DWB-26a (units)	DWB-26ah (units)	DWB-26b (units)	DWB-26bh (units)	DWB-27a (units)	DWB-27ah (units)	DWB-28a (units)	DWB-28ah (units)	DWB-28b1 (units)	DWB-28bh1 (units)	DWB-28b2 (units)	DWB-28bh2 (units)	DWB-29a (units)	DWB-29ah (units)	DWB-29b (units)	DWB-29bh (units)	DWB-29EB (units)
pH	-	5		4.6		4.4		4.2		4.6		3.8		6.4		6.2		3.9		5.1		5.5		5.6		5.4		4.8		

Analyte	Reporting Limit (soil) (mg/kg)	DWB-22a	DWB-22ah	DWB-23a	DWB-23ah	DWB-24b1	DWB-24bh1	DWB-24b2	DWB-24bh2	DWB-25a	DWB-25ah	DWB-25b	DWB-25bh	DWB-26a	DWB-26ah	DWB-26b	DWB-26bh	DWB-27a	DWB-27ah	DWB-28a	DWB-28ah	DWB-28b1	DWB-28bh1	DWB-28b2	DWB-28bh2	DWB-29a	DWB-29ah	DWB-29b	DWB-29bh	DWB-29EB
CHLORINATED PESTICIDES																														
Aldrin	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
alpha-BHC	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
beta-BHC	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
gamma-BHC (Lindane)	0.3	ND		**0.32**		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
delta-BHC	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Chlordane	0.6	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
p,p'-DDD	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
p,p'-DDE	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		**0.01**		
p,p'-DDT	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Dieldrin	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Endosulfan	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Endosulfan II	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Endosulfan Sulfate	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Endrin	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Endrin Aldehyde	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Endrin Ketone	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Heptachlor	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Heptachlor Epoxide	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Methoxychlor	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Toxaphene	0.0	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Surrogate TCMX		NC		105 (%)		77 (%)		83 (%)		NC		NC		89 (%)		65 (%)		NC		NC		91 (%)		101 (%)		NC		80 (%)		
Surrogate Decachlorobiphenyl		NC		NC		26 (%)		26 (%)		NC		NC		36 (%)		21 (%)		NC		NC		NC		50 (%)		NC		40 (%)		

Analyte	Reporting Limit (soil) (mg/kg)	DWB-22a (mg/kg)	DWB-22ah (mg/kg)	DWB-23a (mg/kg)	DWB-23ah (mg/kg)	DWB-24b1 (mg/kg)	DWB-24bh1 (mg/kg)	DWB-24b2 (mg/kg)	DWB-24bh2 (mg/kg)	DWB-25a (mg/kg)	DWB-25ah (mg/L)	DWB-25b (mg/L)	DWB-25bh (mg/L)	DWB-26a (mg/kg)	DWB-26ah (mg/kg)	DWB-26b (mg/kg)	DWB-26bh (mg/kg)	DWB-27a (mg/kg)	DWB-27ah (mg/kg)	DWB-28a (mg/kg)	DWB-28ah (mg/kg)	DWB-28b1 (mg/kg)	DWB-28bh1 (mg/kg)	DWB-28b2 (mg/L)	DWB-28bh2 (mg/kg)	DWB-29a (mg/kg)	DWB-29ah (mg/kg)	DWB-29b (mg/kg)	DWB-29bh (mg/kg)	DWB-29EB (mg/kg)
POLYCHLORINATED BEPHENYLS																														
PCB 1016	0.04	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
PCB 1221	0.04	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
PCB 1232	0.04	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
PCB 1242	0.04	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
PCB 1248	0.04	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
PCB 1254	0.04	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
PCB 1260	0.04	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Surrogate TCMX		73 (%)		79 (%)		39 (%)		93 (%)		65 (%)		42 (%)		92 (%)		62 (%)		NC		76 (%)		75 (%)		82 (%)		NC		79 (%)		
Surrogate Decachlorobiphenyl		79 (%)		36 (%)		43 (%)		86 (%)		90 (%)		35 (%)		84 (%)		56 (%)		NC		112 (%)		87 (%)		75 (%)		21 (%)		67 (%)		

Analyte	Reporting Limit (soil) (mg/kg)	DWB-22a (mg/kg)	DWB-22ah (mg/kg)	DWB-23a (mg/kg)	DWB-23ah (mg/kg)	DWB-24b1 (mg/kg)	DWB-24bh1 (mg/kg)	DWB-24b2 (mg/kg)	DWB-24bh2 (mg/kg)	DWB-25a (mg/kg)	DWB-25ah (mg/L)	DWB-25b (mg/L)	DWB-25bh (mg/L)	DWB-26a (mg/kg)	DWB-26ah (mg/kg)	DWB-26b (mg/kg)	DWB-26bh (mg/kg)	DWB-27a (mg/kg)	DWB-27ah (mg/kg)	DWB-28a (mg/kg)	DWB-28ah (mg/kg)	DWB-28b1 (mg/kg)	DWB-28bh1 (mg/kg)	DWB-28b2 (mg/kg)	DWB-28bh2 (mg/kg)	DWB-29a (mg/kg)	DWB-29ah (mg/kg)	DWB-29b (mg/kg)	DWB-29bh (mg/kg)	DWB-29EB (mg/kg)
AROMATIC & TOTAL PURGEABLE PETROLEUM HYDROCARBONS																														
Benzene	0.013	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Toluene	0.013	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Ethylbenzene	0.013	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Xylenes (Total)	0.013	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		**0.10**		**0.16**		ND		ND		
Methyl tert-Butyl Ether (MTBE)	0.63	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Surrogate 4-BFB (FID)		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Surrogate 4-BFB (PID)		62 (%)		58 (%)		70 (%)		69 (%)		59 (%)		64 (%)		67 (%)		99 (%)		67 (%)		57 (%)		122 (%)		131 (%)		68 (%)		72 (%)		

Analyte	Reporting Limit (soil) (mg/kg)	DWB-22a (mg/kg)	DWB-22ah (mg/kg)	DWB-23a (mg/kg)	DWB-23ah (mg/kg)	DWB-24b1 (mg/kg)	DWB-24bh1 (mg/kg)	DWB-24b2 (mg/kg)	DWB-24bh2 (mg/kg)	DWB-25a (mg/kg)	DWB-25ah (mg/L)	DWB-25b (mg/L)	DWB-25bh (mg/L)	DWB-26a (mg/kg)	DWB-26ah (mg/kg)	DWB-26b (mg/kg)	DWB-26bh (mg/kg)	DWB-27a (mg/kg)	DWB-27ah (mg/kg)	DWB-28a (mg/kg)	DWB-28ah (mg/kg)	DWB-28b1 (mg/kg)	DWB-28bh1 (mg/kg)	DWB-28b2 (mg/kg)	DWB-28bh2 (mg/kg)	DWB-29a (mg/kg)	DWB-29ah (mg/kg)	DWB-29b (mg/kg)	DWB-29bh (mg/kg)	DWB-29EB (mg/kg)
Oil & Grease	1000		**10,200**		**28,300**		**144**		**132**		**195,000**		**126**		**291**		**54**		**17,800**		**296,000**		**35,500**		**35,300**		**89,400**		**2,490**	

TPH: Total Petroleum Hydrocarbons

ND: None Detected at Reporting Limit

NC: A result could not be calculated due to matrix interference.

mg/kg: milligrams/kilogram = parts per million

µg/L: micrograms/liter = parts per billion

*Reporting Limit - 10 mg/kg

SOIL SAMPLE RESULTS

Organophosphorus Pesticides & Semivolitile Organic Compounds

Analyte	Reporting Limit (soil) (mg/kg)	DWB-22a (mg/kg)	DWB-22ah (mg/kg)	DWB-23a (mg/kg)	DWB-23ah (mg/kg)	DWB-24b1 (mg/kg)	DWB-24bh1 (mg/kg)	DWB-24b2 (mg/kg)	DWB-24bh2 (mg/kg)	DWB-25a (mg/kg)	DWB-25ah (mg/kg)	DWB-25b (mg/kg)	DWB-25bh (mg/kg)	DWB-26a (mg/kg)	DWB-26ah (mg/kg)	DWB-26b (mg/kg)	DWB-26bh (mg/kg)	DWB-27a (mg/kg)	DWB-27ah (mg/kg)	DWB-28a (mg/kg)	DWB-28ah (mg/kg)	DWB-28b1 (mg/kg)	DWB-28bh1 (mg/kg)	DWB-28b2 (mg/kg)	DWB-28bh2 (mg/kg)	DWB-29a (mg/kg)	DWB-29ah (mg/kg)	DWB-29b (mg/kg)	DWB-29bh (mg/kg)	DWB-29EB (mg/kg)
ORGANOPHOSPHORUS PESTICIDES																														
Chlorpyrifos (Dursban)	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Coumaphos	20	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Demeton (O & S)	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Diazinon	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Dichlorvos	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Disulfoton (Di-Syston)	70	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Ethoprophos (Prophos)	70	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Fensulfothion	10	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Fenthion	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Azinphos methy (Guthion)	20	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Merphos	20	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Parathion methyl	70	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Naled (Dibrom)	70	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Phorate (Thimet)	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Mevinphos (Phosdrin)	20	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Ronnel (Fenchlorophos)	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Bolstar (Sulprofos)	10	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Stirophos (Tetrachlorvinphos)	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Tokuthion (Prothiofos)	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Trichloronate	10	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Surrogate-Tributylphosphate		342 (%)		97 (%)		77 (%)		90 (%)		355 (%)		NC		91 (%)		68 (%)		316 (%)		636 (%)		356 (%)		350 (%)		366 (%)		179 (%)		
Surrogate-Triphenylphosphate		72 (%)		121 (%)		60 (%)		75 (%)		131 (%)		NC		83 (%)		44 (%)		NC		1,270 (%)		133 (%)		126 (%)		105 (%)		79 (%)		

Analyte	Reporting Limit (soil) (mg/kg)	DWB-22a (mg/kg)	DWB-22ah (mg/kg)	DWB-23a (mg/kg)	DWB-23ah (mg/kg)	DWB-24b1 (mg/kg)	DWB-24bh1 (mg/kg)	DWB-24b2 (mg/kg)	DWB-24bh2 (mg/kg)	DWB-25a (mg/kg)	DWB-25ah (mg/kg)	DWB-25b (mg/kg)	DWB-25bh (mg/kg)	DWB-26a (mg/kg)	DWB-26ah (mg/kg)	DWB-26b (mg/kg)	DWB-26bh (mg/kg)	DWB-27a (mg/kg)	DWB-27ah (mg/kg)	DWB-28a (mg/kg)	DWB-28ah (mg/kg)	DWB-28b1 (mg/kg)	DWB-28bh1 (mg/kg)	DWB-28b2 (mg/L)	DWB-28bh2 (mg/kg)	DWB-29a (mg/kg)	DWB-29ah (mg/kg)	DWB-29b (mg/kg)	DWB-29bh (mg/kg)	DWB-29EB (mg/kg)
SEMIVOLATILE ORGANIC COMPOUNDS																														
Acenaphtene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Acenaphthylene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Anthracene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Benzo(a)anthracene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Benzo(b)fluoranthene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Benzo(k)fluoranthene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Benzo(ghi)perylene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Benzo(a)pyrene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Chrysene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Dibenzo(a,h)anthracene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Fluoranthene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Fluorene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Indeno(1,2,3-cd)pyrene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Napthalene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Phenanthrene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Pyrene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Surrogate Nitrobenzene-d5		85 (%)		74 (%)		73 (%)		81 (%)		77 (%)		67 (%)		79 (%)		85 (%)		84 (%)		84 (%)		112 (%)		187 (%)		95 (%)		86 (%)		
Surrogate 2-Fuorobiphenyl		120 (%)		101 (%)		80 (%)		94 (%)		132 (%)		90 (%)		85 (%)		84 (%)		121 (%)		135 (%)		129 (%)		251 (%)		143 (%)		93 (%)		
Surrogate Terphenyl-d14		84 (%)		77 (%)		77 (%)		2 (%)		93 (%)		70 (%)		79 (%)		78 (%)		78 (%)		97 (%)		87 (%)		155 (%)		111 (%)		9 (%)		
Surrogate 2-Fuorophenol		68 (%)		61 (%)		63 (%)		65 (%)		71 (%)		54 (%)		59 (%)		63 (%)		77 (%)		71 (%)		66 (%)		144 (%)		76 (%)		65 (%)		
Surrogate Phenol-d6		86 (%)		73 (%)		73 (%)		76 (%)		85 (%)		67 (%)		74 (%)		79 (%)		94 (%)		88 (%)		91 (%)		185 (%)		88 (%)		82 (%)		
Surrogate 2,4,6-Tribromophenol		92 (%)		69 (%)		93 (%)		88 (%)		65 (%)		67 (%)		5 (%)		96 (%)		99 (%)		55 (%)		77 (%)		55 (%)		101 (%)		85 (%)		

TPH: Total Petroleum Hydrocarbons

ND: None Detected at Reporting Limit

NC: A result could not be calculated due to matrix interference.

mg/kg: milligrams/kilogram = parts per million

µg/L: micrograms/liter = parts per billion

[+]Reporting Limit - 10 mg/kg

DELTA WETLANDS / IN-DELTA STORAGE, PHASE II ESA

SOIL SAMPLE RESULTS

METALS

Analyte	Reporting Limit (Soil) (mg/kg)	Reporting Limit (Water) (mg/L)	TTLC* for Metals (mg/kg)	DWL-FB3 (mg/kg)	DWL-FB4 (mg/kg)	DWL-30a1 (mg/kg)	DWL-30ah1 (mg/kg)	DWL-30a2 (mg/kg)	DWL-30ah2 (mg/kg)	DWL-30b (mg/kg)	DWL-30bh (mg/kg)	DWL-30c (mg/kg)	DWL-30ch (mg/kg)	DWL-31a (mg/L)	DWL-31ah (mg/L)	DWL-32a (mg/L)	DWL-32ah (mg/kg)	DWL-32EB (mg/kg)	LAB BLANK
Antimony	2	0.006	500			ND		ND		ND		ND		ND		ND			
Arsenic	1	0.002	500			**4**		**4**		**6**		**2**		**14**		**4**			
Barium	1	0.1	10,000			**110**		**110**		**140**		**58**		**170**		**130**			
Beryllium	0.2	0.001	75			ND		ND		ND		ND		ND		ND			
Cadmium	0.2	0.001	1000			ND		ND		**0.8**		ND		ND		ND			
Hexavalent Chromium	0.5	0.01					ND		ND		ND		ND		ND		ND		ND
Total Chromium	1	0.01	2,500			**20**		**20**		**20**		**7**		**38**		**17**		ND	
Cobalt	0.4	0.01	8,000			**8.5**		**8.8**		**6.8**		**3.8**		**13**		**8.1**			
Copper	1	0.01	2,500			**22**		**22**		**19**		**5**		**26**		**38**			
Lead	1	0.005	1,000			**20**		**17**		**8**		**2**		**10**		**52**			
Mercury	0.02	0.001	20			**0.08**		**0.15**		**0.08**		ND		**0.07**		**0.06**			
Molybdenum	1	0.01	3,500			ND		ND		ND		ND		**1**		**17**			
Nickel	1	0.01	2,000			**24**		**24**		**21**		**11**		**46**		**17**			
Selenium	2	0.005	100			ND		ND		ND		ND		ND		ND			
Silver	0.6	0.01	500			ND		ND		ND		ND		ND		ND			
Thallium	2	0.001	700			ND		ND		ND		ND		ND		ND			
Vanadinium	0.4	0.01	2,400			**32**		ND		**31**		**17**		**56**		**38**			
Zinc	4	0.01	5,000			**190**		**32**		**310**		**17**		**61**		**210**			

ND: None Detected at Reporting Limit

mg/kg: millligrams/kilogram = parts per million

µg/L: micrograms/liter = parts per billion

*Total Threshold Limit Concentration given in Title 22 California Code of Regulations, secion 66261.24

DELTA WETLANDS / IN-DELTA STORAGE, PHASE II ESA

SOIL SAMPLE RESULTS

pH, Chlorinated Pesticides, PCBs, PAH, Oil & Grease

Analyte	Reporting Limit (soil)	DWL-FB3	DWL-FB4	DWL-30a1	DWL-30ah1	DWL-30a2	DWL-30ah2	DWL-30b	DWL-30bh	DWL-30c	DWL-30ch	DWL-31a	DWL-31ah	DWL-32a	DWL-32ah	DWL-32EB
	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)
pH	-			5.8		5.8		5.6		6.6		6		6.2		

Analyte	Reporting Limit (soil)	DWL-FB3	DWL-FB4	DWL-30a1	DWL-30ah1	DWL-30a2	DWL-30ah2	DWL-30b	DWL-30bh	DWL-30c	DWL-30ch	DWL-31a	DWL-31ah	DWL-32a	DWL-32ah	DWL-32EB
CHLORINATED PESTICIDES	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aldrin	0.3			ND		ND		ND		ND		ND		ND		
alpha-BHC	0.3			ND		ND		ND		ND		ND		ND		
beta-BHC	0.3			ND		ND		ND		ND		ND		ND		
gamma-BHC (Lindane)	0.3			ND		ND		ND		ND		ND		ND		
delta-BHC	0.3			ND		ND		ND		ND		ND		ND		
Chlordane	0.6			ND		ND		ND		ND		ND		ND		
p,p'-DDD	0.3			ND		ND		ND		ND		**0.049**		ND		
p,p'-DDE	0.3			ND		ND		ND		ND		**0.17**		ND		
p,p'-DDT	0.3			ND		ND		ND		ND		**0.089**		ND		
Dieldrin	0.3			ND		ND		ND		ND		**0.15**		ND		
Endosulfan	0.3			ND		ND		ND		ND		ND		ND		
Endosulfan II	0.3			ND		ND		ND		ND		ND		ND		
Endosulfan Sulfate	0.3			ND		ND		ND		ND		ND		ND		
Endrin	0.3			ND		ND		ND		ND		ND		ND		
Endrin Aldehyde	0.3			ND		ND		ND		ND		ND		ND		
Endrin Ketone	0.3			ND		ND		ND		ND		ND		ND		
Heptachlor	0.3			ND		ND		ND		ND		ND		ND		
Heptachlor Epoxide	0.3			ND		ND		ND		ND		ND		ND		
Methoxychlor	0.3			ND		ND		ND		ND		ND		ND		
Toxaphene	0.0			ND		ND		ND		ND		ND		ND		
Surrogate TCMX				NC		139 (%)		NC		113 (%)		117 (%)		NC		
Surrogate Decachlorobiphenyl				NC		NC		NC		NC		165 (%)		287 (%)		

Analyte	Reporting Limit (soil)	DWL-FB3	DWL-FB4	DWL-30a1	DWL-30ah1	DWL-30a2	DWL-30ah2	DWL-30b	DWL-30bh	DWL-30c	DWL-30ch	DWL-31a	DWL-31ah	DWL-32a	DWL-32ah	DWL-32EB
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/L)	(mg/L)	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)
POLYCHLORINATED BEPHENYLS																
PCB 1016	0.04			ND		ND		ND		ND		ND		ND		
PCB 1221	0.04			ND		ND		ND		ND		ND		ND		
PCB 1232	0.04			ND		ND		ND		ND		ND		ND		
PCB 1242	0.04			ND		ND		ND		ND		ND		ND		
PCB 1248	0.04			ND		ND		ND		ND		ND		ND		
PCB 1254	0.04			ND		ND		ND		ND		ND		ND		
PCB 1260	0.04			ND		ND		ND		ND		ND		ND		
Surrogate TCMX				51 (%)		58 (%)		48 (%)		59 (%)		70 (%)		109 (%)		
Surrogate Decachlorobiphenyl				100 (%)		89 (%)		99 (%)		92 (%)		44 (%)		98 (%)		

Analyte	Reporting Limit (soil)	DWL-FB3	DWL-FB4	DWL-30a1	DWL-30ah1	DWL-30a2	DWL-30ah2	DWL-30b	DWL-30bh	DWL-30c	DWL-30ch	DWL-31a	DWL-31ah	DWL-32a	DWL-32ah	DWL-32EB
AROMATC & TOTAL PURGEABLE PETROLEUM HYDROCARBONS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/L)	(mg/L)	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.013		ND	ND	ND		ND		ND		ND		ND		ND		
Toluene	0.013		ND	ND	**0.016**		**0.018**		ND		**0.016**		ND		ND		
Ethylbenzene	0.013		ND	ND	ND		ND		ND		**0.057**		ND		ND		
Xylenes (Total)	0.013		ND	ND	**0.045**		**0.041**		**0.12**		**0.43**		ND		ND		
Methyl tert-Butyl Ether (MTBE)	0.63		ND	ND	ND		ND		ND		ND		ND		ND		
Surrogate 4-BFB (FID)			93 (%)	86 (%)	ND		ND		ND		ND		ND		ND		
Surrogate 4-BFB (PID)			84 (%)	81 (%)	140 (%)		144 (%)		133 (%)		146 (%)		68 (%)		68 (%)		

Analyte	Reporting Limit (soil)	DWL-FB3	DWL-FB4	DWL-30a1	DWL-30ah1	DWL-30a2	DWL-30ah2	DWL-30b	DWL-30bh	DWL-30c	DWL-30ch	DWL-31a	DWL-31ah	DWL-32a	DWL-32ah	DWL-32EB	LAB BLANK
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/L)	(mg/L)	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	
Oil & Grease	1000				**84,600**		**85,800**		**84,000**		**52,300**		ND		**112,000**		ND

TPH: Total Petroleum Hydrocarbons

ND: None Detected at Reporting Limit

NC: A result could not be calculated due to matrix interference.

mg/kg: millligrams/kilogram = parts per million

µg/L: micrograms/liter = parts per billion

*Reporting Limit - 10 mg/kg

DELTA WETLANDS / IN-DELTA STORAGE, PHASE II ESA

SOIL SAMPLE RESULTS

Organophosphorus Pesticides & Semivolitile Organic Compounds

Analyte	Reporting Limit (soil) (mg/kg)	DWL-FB3 (mg/kg)	DWL-FB4 (mg/kg)	DWL-30a1 (mg/kg)	DWL-30ah1 (mg/kg)	DWL-30a2 (mg/kg)	DWL-30ah2 (mg/kg)	DWL-30b (mg/kg)	DWL-30bh (mg/kg)	DWL-30c (mg/kg)	DWL-30ch (mg/kg)	DWL-31a (mg/kg)	DWL-31ah (mg/kg)	DWL-32a (mg/kg)	DWL-32ah (mg/kg)	DWL-32EB (mg/kg)
ORGANOPHOSPHORUS PESTICIDES																
Chlorpyrifos (Dursban)	4			ND		ND		ND		ND		ND		ND		
Coumaphos	20			ND		ND		ND		ND		ND		ND		
Demeton (O & S)	4			ND		ND		ND		ND		ND		ND		
Diazinon	4			ND		ND		ND		ND		ND		ND		
Dichlorvos	4			ND		ND		ND		ND		ND		ND		
Disulfoton (Di-Syston)	70			ND		ND		ND		ND		ND		ND		
Ethoprophos (Prophos)	70			ND		ND		ND		ND		ND		ND		
Fensulfothion	10			ND		ND		ND		ND		ND		ND		
Fenthion	4			ND		ND		ND		ND		ND		ND		
Azinphos methy (Guthion)	20			ND		ND		ND		ND		ND		ND		
Merphos	20			ND		ND		ND		ND		ND		ND		
Parathion methyl	70			ND		ND		ND		ND		ND		ND		
Naled (Dibrom)	70			ND		ND		ND		ND		ND		ND		
Phorate (Thimet)	4			ND		ND		ND		ND		ND		ND		
Mevinphos (Phosdrin)	20			ND		ND		ND		ND		ND		ND		
Ronnel (Fenchlorophos)	4			ND		ND		ND		ND		ND		ND		
Bolstar (Sulprofos)	10			ND		ND		ND		ND		ND		ND		
Stirophos (Tetrachlorvinphos)	4			ND		ND		ND		ND		ND		ND		
Tokuthion (Prothiofos)	4			ND		ND		ND		ND		ND		ND		
Trichloronate	10			ND		ND		ND		ND		ND		ND		
Surrogate-Tributylphosphate				NC		NC		NC		93 (%)		156 (%)		353 (%)		
Surrogate-Triphenylphosphate				494 (%)		500 (%)		502 (%)		88 (%)		45 (%)		62 (%)		

Analyte	Reporting Limit (soil) (mg/kg)	DWL-FB3 (mg/kg)	DWL-FB4 (mg/kg)	DWL-30a1 (mg/kg)	DWL-30ah1 (mg/kg)	DWL-30a2 (mg/kg)	DWL-30ah2 (mg/kg)	DWL-30b (mg/kg)	DWL-30bh (mg/kg)	DWL-30c (mg/kg)	DWL-30ch (mg/kg)	DWL-31a (mg/kg)	DWL-31ah (mg/kg)	DWL-32a (mg/kg)	DWL-32ah (mg/kg)	DWL-32EB (mg/kg)
SEMIVOLATILE ORGANIC COMPOUNDS																
Acenaphtene	50			ND		ND		ND		ND		ND		ND		
Acenaphthylene	50			ND		ND		ND		ND		ND		ND		
Anthracene	50			ND		ND		ND		ND		ND		ND		
Benzo(a)anthracene	50			ND		ND		ND		ND		ND		ND		
Benzo(b)fluoranthene	50			ND		ND		ND		ND		ND		ND		
Benzo(k)fluoranthene	50			ND		ND		ND		ND		ND		ND		
Benzo(ghi)perylene	50			ND		ND		ND		ND		ND		ND		
Benzo(a)pyrene	50			ND		ND		ND		ND		ND		ND		
Chrysene	50			ND		ND		ND		ND		ND		ND		
Dibenzo(a,h)anthracene	50			ND		ND		ND		ND		ND		ND		
Fluoranthene	50			ND		ND		ND		ND		ND		ND		
Fluorene	50			ND		ND		ND		ND		ND		ND		
Indeno(1,2,3-cd)pyrene	50			ND		ND		ND		ND		ND		ND		
Napthalene	50			ND		ND		ND		ND		ND		ND		
Phenanthrene	50			ND		ND		ND		ND		ND		ND		
Pyrene	50			ND		ND		ND		ND		ND		ND		
Surrogate Nitrobenzene-d5				103 (%)		90 (%)		89 (%)		86 (%)		83 (%)		94 (%)		
Surrogate 2-Fuorobiphenyl				143 (%)		115 (%)		108 (%)		110 (%)		87 (%)		137 (%)		
Surrogate Terphenyl-d14				75 (%)		60 (%)		64 (%)		61 (%)		67 (%)		94 (%)		
Surrogate 2-Fuorophenol				74 (%)		73 (%)		73 (%)		74 (%)		64 (%)		76 (%)		
Surrogate Phenol-d6				94 (%)		86 (%)		86 (%)		85 (%)		77 (%)		89 (%)		
Surrogate 2,4,6-Tribromophenol				65 (%)		69 (%)		74 (%)		65 (%)		92 (%)		97 (%)		

TPH: Total Petroleum Hydrocarbons

ND: None Detected at Reporting Limit

NC: A result could not be calculated due to matrix interference.

mg/kg: millligrams/kilogram = parts per million

µg/L: micrograms/liter = parts per billion

+Reporting Limit - 10 mg/kg

DELTA WETLANDS / IN-DELTA STORAGE, PHASE II ESA

SOIL SAMPLE RESULTS

METALS

Analyte	Reporting Limit (Soil) (mg/kg)	Reporting Limit (Water) (mg/L)	TTLC* for Metals (mg/kg)	DWH-1a (mg/kg)	DWH-1ah (mg/kg)	DWH-1b (mg/kg)	DWH-1bh (mg/kg)	DWH-2a (mg/kg)	DWH-2ah (mg/kg)	DWH-2b (mg/kg)	DWH-2bh (mg/kg)	DWH-3a (mg/kg)	DWH-3ah (mg/kg)	DWH-3b (mg/L)	DWH-3bh (mg/L)	DWH-4a (mg/L)	DWH-4ah (mg/kg)	DWH-4b (mg/kg)	DWH-4bh (mg/kg)	DWH-5a (mg/kg)	DWH-5ah (mg/kg)	DWH-5b (mg/kg)	DWH-5bh (mg/kg)	DWH-6a (mg/kg)	DWH-6ah (mg/kg)	DWH-6b1 (mg/kg)	DWH-6bh1 (mg/L)	DWH-6b2 (mg/kg)	DWH-6bh2 (mg/kg)	DWH-7a (mg/kg)	DWH-7ah (mg/kg)	DWH-7b (mg/kg)	DWH-7bh (mg/kg)	DWH-8a (mg/kg)	DWH-8ah (mg/kg)	DWH-8b1 (mg/kg)	DWH-8bh1 (mg/kg)	DWH-8b2	DWH-8bh2	DWH-9a	DWH-9ah	DWH-10a	DWH-10ah	DWH-11a	DWH-11ah	DWH-EB
Antimony	2	0.006	500	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Arsenic	1	0.002	500	**3**		**6**		**2**		**4**		**2**		**1**		**2**		**3**		**3**		**3**		**3**		ND		ND		**2**		**2**		**2**		**1**		**2**		**3**		**2**		**2**		ND
Barium	1	0.1	10,000	**44**		**86**		**28**		**70**		**25**		**27**		**30**		**35**		**41**		**36**		**47**		**18**		**19**		**36**		**19**		**39**		**28**		**27**		**36**		**24**		**33**		ND
Beryllium	0.2	0.001	75	**0.2**		**0.3**		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Cadmium	0.2	0.001	1000	**1.3**		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		**0.9**		ND		ND		ND		ND		ND
Hexavalent Chromium	1	0.01			ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Total Chromium	1	0.01	2,500	**13**		**23**		**9**		**17**		**9**		**11**		**9**		**10**		**10**		**11**		**11**		**11**		**11**		**9**		**9**		**10**		**11**		**10**		**10**		**8**		**7**		ND
Cobalt	0.4	0.01	8,000	**3.2**		**6.3**		**2.6**		**3.8**		**2.3**		**3.6**		**2.5**		**2.5**		**2.5**		**2.8**		**2.2**		**2.2**		**2.3**		**2.5**		**2.7**		**2.3**		**2.3**		**2.2**		**2.8**		**2.5**		**2**		ND
Copper	1	0.01	2,500	**10**		**29**		**4**		**16**		**3**		**4**		**3**		**4**		**8**		**4**		**14**		**3**		**3**		**11**		**4**		**8**		**3**		**3**		**5**		**5**		**3**		ND
Lead	1	0.005	1,000	**20**		**31**		**3**		**18**		**2**		**2**		**8**		**3**		**8**		**4**		**13**		**2**		**2**		**16**		**3**		**9**		**3**		**3**		**3**		**2**		**2**		ND
Mercury	0.02	0.001	20	ND		**0.04**		ND		**0.03**		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Molybdenum	1	0.01	3,500	**2**		**4**		ND		**3**		ND		ND		ND		**1**		**1**		ND		**2**		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Nickel	1	0.01	2,000	**13**		**23**		**10**		**19**		**9**		**13**		**10**		**11**		**11**		**12**		**10**		**9**		**10**		**10**		**10**		**10**		**10**		**10**		**11**		**10**		**9**		ND
Selenium	2	0.005	100	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Silver	0.6	0.01	500	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Thallium	2	0.001	700	**16**		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Vanadinium	0.4	0.01	2,400	**530**		**36**		**13**		**30**		**12**		**18**		**13**		**15**		**13**		**15**		**10**		**17**		**18**		**11**		**13**		**12**		**13**		**13**		**15**		**12**		**11**		ND
Zinc	4	0.01	5,000	**4.6**		**310**		**35**		**68**		**15**		**11**		**35**		**9**		**290**		**45**		**360**		**12**		**10**		**200**		**13**		**43**		**11**		**11**		**16**		**13**		**11**		ND

ND: None Detected at Reporting Limit

mg/kg: milligrams/kilogram = parts per million

µg/L: micrograms/liter = parts per billion

*Total Threshold Limit Concentration given in Title 22 California Code of Regulations, secion 66261.24

DELTA WETLANDS / IN-DELTA STORAGE, PHASE II ESA

SOIL SAMPLE RESULTS

pH, Chlorinated Pesticides, PCBs, PAH, Oil & Grease

Analyte	Reporting Limit (soil)	DWH-1a	DWH-1ah	DWH-1b	DWH-1bh	DWH-2a	DWH-2ah	DWH-2b	DWH-2bh	DWH-3a	DWH-3ah	DWH-3b	DWH-3bh	DWH-4a	DWH-4ah	DWH-4b	DWH-4bh	DWH-5a	DWH-5ah	DWH-5b	DWH-5bh	DWH-6a	DWH-6ah	DWH-6b1	DWH-6bh1	DWH-6b2	DWH-6bh2	DWH-7a	DWH-7ah	DWH-7b	DWH-7bh	DWH-8a	DWH-8ah	DWH-8b1	DWH-8bh1	DWH-8b2	DWH-8bh2	DWH-9a	DWH-9ah	DWH-10a	DWH-10ah	DWH-11a	DWH-11ah
	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)	(units)									
pH	-	4.6		6.4		6.1		5.5		7.6		7.7		7.1		7.6		6.5		7.8		6.5		8.0		8		5.5		7.4		7		7.9		8		6.9		6.7		7.1	

Analyte	Reporting Limit (soil)	DWH-1a	DWH-1ah	DWH-1b	DWH-1bh	DWH-2a	DWH-2ah	DWH-2b	DWH-2bh	DWH-3a	DWH-3ah	DWH-3b	DWH-3bh	DWH-4a	DWH-4ah	DWH-4b	DWH-4bh	DWH-5a	DWH-5ah	DWH-5b	DWH-5bh	DWH-6a	DWH-6ah	DWH-6b1	DWH-6bh1	DWH-6b2	DWH-6bh2	DWH-7a	DWH-7ah	DWH-7b	DWH-7bh	DWH-8a	DWH-8ah	DWH-8b1	DWH-8bh1	DWH-8b2	DWH-8bh2	DWH-9a	DWH-9ah	DWH-10a	DWH-10ah	DWH-11a	DWH-11ah
CHLORINATED PESTICIDES	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aldrin	0.006	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
alpha-BHC	0.006	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
beta-BHC	0.006	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
gamma-BHC (Lindane)	0.006	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
delta-BHC	0.006	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chlordane	0.012	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
p,p'-DDD	0.006	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
p,p'-DDE	0.150	ND		**0.045**		ND		**0.35**		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
p,p'-DDT	0.006	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		**0.036**		ND		ND		ND		ND		ND	
Dieldrin	0.150	ND		**0.34**		ND		**1.5**		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endosulfan	0.006	ND		ND		ND		ND		ND		ND		**0.165**		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endosulfan II	0.006	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endosulfan Sulfate	0.006	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endrin	0.006	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endrin Aldehyde	0.006	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endrin Ketone	0.006	ND		ND		ND		**0.022**		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Heptachlor	0.006	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Heptachlor Epoxide	0.006	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Methoxychlor	0.006	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Toxaphene	0.040	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Surrogate TCMX		101 (%)		116 (%)		101 (%)		100 (%)		NC		48 (%)		81 (%)		97 (%)		107 (%)		74 (%)		470 (%)		110 (%)		91 (%)		770 (%)		114 (%)		104 (%)		105 (%)		98 (%)		82 (%)		79 (%)		102 (%)	
Surrogate Decachlorobiphenyl		92 (%)		108 (%)		98 (%)		128 (%)		48 (%)		46 (%)		199 (%)		89 (%)		NC		82 (%)		NC		67 (%)		78 (%)		NC		57 (%)		88 (%)		97 (%)		100 (%)		56 (%)		61 (%)		98 (%)	

Analyte	Reporting Limit (soil)	DWH-1a	DWH-1ah	DWH-1b	DWH-1bh	DWH-2a	DWH-2ah	DWH-2b	DWH-2bh	DWH-3a	DWH-3ah	DWH-3b	DWH-3bh	DWH-4a	DWH-4ah	DWH-4b	DWH-4bh	DWH-5a	DWH-5ah	DWH-5b	DWH-5bh	DWH-6a	DWH-6ah	DWH-6b1	DWH-6bh1	DWH-6b2	DWH-6bh2	DWH-7a	DWH-7ah	DWH-7b	DWH-7bh	DWH-8a	DWH-8ah	DWH-8b1	DWH-8bh1	DWH-8b2	DWH-8bh2	DWH-9a	DWH-9ah	DWH-10a	DWH-10ah	DWH-11a	DWH-11ah
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/L)	(mg/L)	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
POLYCHLORINATED BEPHENYLS																																											
PCB 1016	0.02	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
PCB 1221	0.02	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
PCB 1232	0.02	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
PCB 1242	0.02	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
PCB 1248	0.02	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
PCB 1254	0.02	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
PCB 1260	0.02	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Surrogate TCMX		87 (%)		82 (%)		85 (%)		78 (%)		26 (%)		88 (%)		102 (%)		103 (%)		72 (%)		64 (%)		71 (%)		63 (%)		63 (%)		44 (%)		70 (%)		69 (%)		63 (%)		67 (%)		57 (%)		56 (%)		65 (%)	
Surrogate Decachlorobiphenyl		97 (%)		95 (%)		94 (%)		85 (%)		35 (%)		94 (%)		92 (%)		59 (%)		72 (%)		64 (%)		113 (%)		69 (%)		68 (%)		103 (%)		84 (%)		113 (%)		73 (%)		78 (%)		59 (%)		59 (%)		73 (%)	

Analyte	Reporting Limit (soil)	DWH-1a	DWH-1ah	DWH-1b	DWH-1bh	DWH-2a	DWH-2ah	DWH-2b	DWH-2bh	DWH-3a	DWH-3ah	DWH-3b	DWH-3bh	DWH-4a	DWH-4ah	DWH-4b	DWH-4bh	DWH-5a	DWH-5ah	DWH-5b	DWH-5bh	DWH-6a	DWH-6ah	DWH-6b1	DWH-6bh1	DWH-6b2	DWH-6bh2	DWH-7a	DWH-7ah	DWH-7b	DWH-7bh	DWH-8a	DWH-8ah	DWH-8b1	DWH-8bh1	DWH-8b2	DWH-8bh2	DWH-9a	DWH-9ah	DWH-10a	DWH-10ah	DWH-11a	DWH-11ah	DWH-F1	DWH-F2
AROMATC & TOTAL PURGEABLE PETROLEUM HYDROCARBONS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/L)	(mg/L)	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)															
Benzene	0.0025	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	ND
Toluene	0.0025	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	ND
Ethylbenzene	0.0025	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	ND
Xylenes (Total)	0.0025	ND		ND		ND		ND		**0.26**		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	ND
Methyl tert-Butyl Ether (MTBE)	0.125	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	ND
Surrogate 4-BFB (PID)		103 (%)		102 (%)		100 (%)		112 (%)		95 (%)		94 (%)		108 (%)		101 (%)		138 (%)		99 (%)		132 (%)		72 (%)		72 (%)		129 (%)		71 (%)		65 (%)		70 (%)		64 (%)		70 (%)		95 (%)		68 (%)		85 (%)	82 (%)

Analyte	Reporting Limit (soil)	DWH-1a	DWH-1ah	DWH-1b	DWH-1bh	DWH-2a	DWH-2ah	DWH-2b	DWH-2bh	DWH-3a	DWH-3ah	DWH-3b	DWH-3bh	DWH-4a	DWH-4ah	DWH-4b	DWH-4bh	DWH-5a	DWH-5ah	DWH-5b	DWH-5bh	DWH-6a	DWH-6ah	DWH-6b1	DWH-6bh1	DWH-6b2	DWH-6bh2	DWH-7a	DWH-7ah	DWH-7b	DWH-7bh	DWH-8a	DWH-8ah	DWH-8b1	DWH-8bh1	DWH-8b2	DWH-8bh2	DWH-9a	DWH-9ah	DWH-10a	DWH-10ah	DWH-11a	DWH-11ah
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/L)	(mg/L)	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)													
Oil & Grease	10		**192**		**93**		ND		**36**		**51,800**		ND		**75,600**		ND		**53,800**		ND		**109,000**		**153**		**129**		**118,000**		**30**		**930**		ND		ND		ND		ND		**39**

TPH: Total Petroleum Hydrocarbons
ND: None Detected at Reporting Limit
NC: A result could not be calculated due to matrix interference.
mg/kg: milligrams/kilogram = parts per million
µg/L: micrograms/liter = parts per billion
*Reporting Limit - 10 mg/kg

DELTA WETLANDS / IN-DELTA STORAGE, PHASE II ESA

HOLLAND ISLAND

SOIL SAMPLE RESULTS

Pesticides, Organics, Inorganics

Analyte	Reporting Limit (soil) (mg/kg)	DWH-1a	DWH-1ah	DWH-1b	DWH-1bh	DWH-2a	DWH-2ah	DWH-2b	DWH-2bh	DWH-3a	DWH-3ah	DWH-3b	DWH-3bh	DWH-4a	DWH-4ah	DWH-4b	DWH-4bh	DWH-5a	DWH-5ah	DWH-5b	DWH-5bh	DWH-6a	DWH-6ah	DWH-6b1	DWH-6bh1	DWH-6b2	DWH-6bh2	DWH-7a	DWH-7ah	DWH-7b	DWH-7bh	DWH-8a	DWH-8ah	DWH-8b1	DWH-8bh1	DWH-8b2	DWH-8bh2	DWH-9a	DWH-9ah	DWH-10a	DWH-10ah	DWH-11a	DWH-11ah	DWH-F1	DWH-F2
ORGANOPHOSPHORUS PESTICIDES																																													
Chlorpyrifos (Dursban)	0.8	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Coumaphos	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Demeton (O & S)	0.8	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Diazinon	0.8	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dichlorvos	0.8	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Disulfoton (Di-Syston)	14	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Ethoprophos (Prophos)	14	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Fensulfothion	2	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Fenthion	0.8	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Azinphos methy (Guthion)	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Merphos	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Parathion methyl	14	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Naled (Dibrom)	14	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phorate (Thimet)	0.8	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Mevinphos (Phosdrin)	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Ronnel (Fenchlorophos)	0.8	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Bolstar (Sulprofos)	2	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Stirophos (Tetrachlorvinphos)	0.8	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Tokuthion (Prothiofos)	0.8	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Trichloronate	2	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Surrogate-Tributylphosphate		44 (%)		NC		NC		NC		298 (%)		NC		NC		51 (%)		134 (%)		62 (%)		NC		58 (%)		62 (%)		188 (%)		80 (%)		56 (%)		65 (%)		68 (%)		54 (%)		66 (%)		56 (%)			
Surrogate-Triphenylphosphate		88 (%)		62 (%)		60 (%)		60 (%)		669 (%)		61 (%)		NC		57 (%)		NC		69 (%)		191 (%)		65 (%)		68 (%)		NC		95 (%)		70 (%)		70 (%)		71 (%)		64 (%)		67 (%)		60 (%)			

Analyte	Reporting Limit (soil) (mg/kg)	DWH-1a	DWH-1ah	DWH-1b	DWH-1bh	DWH-2a	DWH-2ah	DWH-2b	DWH-2bh	DWH-3a *	DWH-3ah	DWH-3b	DWH-3bh	DWH-4a	DWH-4ah	DWH-4b	DWH-4bh	DWH-5a	DWH-5ah	DWH-5b	DWH-5bh	DWH-6a	DWH-6ah	DWH-6b1	DWH-6bh1	DWH-6b2	DWH-6bh2	DWH-7a	DWH-7ah	DWH-7b	DWH-7bh	DWH-8a	DWH-8ah	DWH-8b1	DWH-8bh1	DWH-8b2	DWH-8bh2	DWH-9a	DWH-9ah	DWH-10a	DWH-10ah	DWH-11a	DWH-11ah	DWH-F1	DWH-F2
SEMIVOLATILE ORGANIC COMPOUNDS																																													
Acenaphtene	0.33	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthylene	0.33	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Anthracene	0.33	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo(a)anthracene	0.33	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo(b)fluoranthene	0.33	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo(k)fluoranthene	0.33	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo(ghi)perylene	0.33	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo(a)pyrene	0.33	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	0.33	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dibenzo(a,h)anthracene	0.33	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Fluoranthene	0.33	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Fluorene	0.33	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Indeno(1,2,3-cd)pyrene	0.33	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Napthalene	0.33	ND		ND		ND		ND		**12**		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	0.33	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Pyrene	0.33	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Surrogate Nitrobenzene-d5		91 (%)		84 (%)		86 (%)		94 (%)		69 (%)		88 (%)		34 (%)		89 (%)		13 (%)		79 (%)		116 (%)		92 (%)		90 (%)		38 (%)		83 (%)		85 (%)		86 (%)		86 (%)		83 (%)		95 (%)		86 (%)			
Surrogate 2-Fuorobiphenyl		93 (%)		86 (%)		86 (%)		94 (%)		100 (%)		87 (%)		42 (%)		86 (%)		16 (%)		90 (%)		136 (%)		90 (%)		90 (%)		51 (%)		93 (%)		90 (%)		86 (%)		83 (%)		85 (%)		102 (%)		87 (%)			
Surrogate Terphenyl-d14		129 (%)		95 (%)		88 (%)		103 (%)		101 (%)		81 (%)		54 (%)		129 (%)		26 (%)		121 (%)		205 (%)		83 (%)		78 (%)		78 (%)		136 (%)		127 (%)		95 (%)		100 (%)		102 (%)		98 (%)		103 (%)			
Surrogate 2-Fuorophenol		73 (%)		68 (%)		72 (%)		76 (%)		79 (%)		70 (%)		29 (%)		73 (%)		11 (%)		70 (%)		82 (%)		72 (%)		69 (%)		33 (%)		54 (%)		62 (%)		46 (%)		63 (%)		67 (%)		78 (%)		59 (%)			
Surrogate Phenol-d6		86 (%)		79 (%)		83 (%)		86 (%)		78 (%)		77 (%)		34 (%)		84 (%)		13 (%)		79 (%)		98 (%)		84 (%)		84 (%)		38 (%)		73 (%)		78 (%)		76 (%)		76 (%)		77 (%)		91 (%)		75 (%)			
Surrogate 2,4,6-Tribromophenol		90 (%)		90 (%)		91 (%)		101 (%)		NC		97 (%)		21 (%)		96 (%)		12 (%)		82 (%)		80 (%)		94 (%)		96 (%)		28 (%)		75 (%)		88 (%)		77 (%)		72 (%)		81 (%)		99 (%)		86 (%)			

TPH: Total Petroleum Hydrocarbons

ND: None Detected at Reporting Limit

NC: A result could not be calculated due to matrix interference.

mg/kg: milligrams/kilogram = parts per million

µg/L: micrograms/liter = parts per billion

* Sample diluted due to a high concentration of non-target analyte(s), resulting in and increased reporting limit of 6.6 mg/kg.

DELTA WETLANDS / IN-DELTA STORAGE, PHASE II ESA

SOIL SAMPLE RESULTS

METALS

Analyte	Reporting Limit (Soil) (mg/kg)	Reporting Limit (Water) (mg/L)	TTLC* for Metals (mg/kg)	DWW-12a (mg/kg)	DWW-12ah (mg/kg)	DWW-12b (mg/kg)	DWW-12bh (mg/kg)	DWW-13a (mg/kg)	DWW-13ah (mg/kg)	DWW-13b (mg/kg)	DWW-13bh (mg/kg)	DWW-14a (mg/kg)	DWW-14ah (mg/kg)	DWW-14b1 (mg/L)	DWW-14b2 (mg/L)	DWW-14bh1 (mg/L)	DWW-14bh2 (mg/kg)	DWW-15a (mg/kg)	DWW-15ah (mg/kg)	DWW-15b (mg/kg)	DWW-15bh (mg/kg)	DWW-16a (mg/kg)	DWW-16ah (mg/kg)	DWW-16b (mg/kg)	DWW-16bh (mg/kg)	DWW-17EB (mg/kg)	DWW-18a (mg/kg)	DWW-18ah (mg/L)	DWW-19a (mg/kg)	DWW-19ah (mg/kg)	DWW-20a1 (mg/kg)	DWW-20ah1 (mg/kg)	DWW-20a2 (mg/kg)	DWW-20ah2 (mg/kg)	DWW-20b (mg/kg)	DWW-20bh (mg/kg)	DWW-21a (mg/kg)	DWW-21ah (mg/kg)	DWW-EB
Antimony	2	0.006	500			ND		ND		ND		ND		ND	ND			ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		ND
Arsenic	1	0.002	500	**3**		**1**		**4**		**5**		**3**		**3**	**2**			**4**		**37**		**7**		**2**			**5**		**7**		**5**		**4**		**13**		**18**		ND
Barium	1	0.1	10,000	**65**		**14**		**31**		**38**		**31**		**16**	**14**			**36**		**21**		**48**		**33**			**90**		**97**		**1500**		**1500**		**250**		**260**		ND
Beryllium	0.2	0.001	75			ND		ND		ND		ND		ND	ND			ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		ND
Cadmium	0.2	0.001	1000	**0.3**		ND		**1.3**		ND		ND		ND	ND			ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		ND
Hexavalent Chromium	0.5	0.01			ND		ND		ND		ND		ND			ND	ND		ND		ND		ND		ND			ND		ND			ND		ND		ND	ND
Total Chromium	1	0.01	2,500	**7**		**4**		**14**		**6**		**6**		**5**	**5**			**6**		**6**		**6**		**6**			**41**		**30**		**21**		**17**		**49**		**48**		ND
Cobalt	0.4	0.01	8,000	**1.6**		**1.7**		**1.8**		**2.4**		**1.8**		**1.6**	**1.6**			**1.6**		**2**		**2.1**		**2.3**			**13**		**8.9**		**5.1**		**5.5**		**8.1**		**8.2**		ND
Copper	1	0.01	2,500	**11**		**1**		**110**		**2**		**7**		**1**	ND			**3**		**1**		**3**		**2**			**24**		**24**		**11**		**12**		**30**		**45**		ND
Lead	1	0.005	1,000	**75**		**2**		**5**		**2**		**11**		**2**	**1**			**6**		**2**		**3**		**2**			**6**		**8**		**9**		**9**		**7**		**11**		ND
Mercury	0.02	0.001	20			ND		ND		ND		ND		ND	ND			ND		ND		ND		ND			**0.09**		**0.09**		**0.15**		**0.21**		**0.04**		**0.06**		ND
Molybdenum	1	0.01	3,500			ND		ND		ND		ND		ND	ND			ND		ND		ND		ND			ND		**1**		ND		ND		**1**		**3**		ND
Nickel	1	0.01	2,000	**6**		**6**		**7**		**7**		**6**		**5**	**5**			**6**		**6**		**6**		**7**			**59**		**32**		**21**		**22**		**45**		**47**		ND
Selenium	2	0.005	100			ND		ND		ND		ND		ND	ND			ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		ND
Silver	0.6	0.01	500			ND		ND		ND		ND		ND	ND			ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		ND
Thallium	2	0.001	700			ND		ND		ND		ND		ND	ND			ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		ND
Vanadinium	0.4	0.01	2,400	**9.4**		**8.5**		**24**		**12**		**8.7**		**7.2**	**7.3**			**9.2**		**8.2**		**11**		**9.7**			**42**		**43**		**21**		**23**		**91**		**100**		ND
Zinc	4	0.01	5,000	**440**		**8**		**140**		**9**		**390**		**12**	**8**			**390**		**10**		**17**		**9**			**54**		**47**		**52**		**58**		**49**		**51**		ND

ND: None Detected at Reporting Limit

mg/kg: millligrams/kilogram = parts per million

µg/L: micrograms/liter = parts per billion

*Total Threshold Limit Concentration given in Title 22 California Code of Regulations, secion 66261.24

DELTA WETLANDS / IN-DELTA STORAGE, PHASE II ESA

SOIL SAMPLE RESULTS

pH, Chlorinated Pesticides, PCBs, PAH, Oil & Grease

Analyte	Reporting Limit (soil) (units)	DWW-12a (units)	DWW-12b (units)	DWW-13a (units)	DWW-13b (units)	DWW-14a (units)	DWW-14b1 (units)	DWW-14b2 (units)	DWW-15a (units)	DWW-15b (units)	DWW-16a (units)	DWW-16b (units)	DWW-18a (units)	DWW-19a (units)	DWW-20a1 (units)	DWW-20a2 (units)	DWW-20b (units)	DWW-21a
pH	-	6.6	8.2	6	8.1	5.9	7.7	7.9	7.3	7.8	7.4	8.2	5.7	5.4	6.6	6.6	5.4	4.5

Analyte	Reporting Limit (soil) (mg/kg)	DWW-12a	DWW-12ah	DWW-12b	DWW-12bh	DWW-13a	DWW-13ah	DWW-13b	DWW-13bh	DWW-14a	DWW-14ah	DWW-14b1	DWW-14bh1	DWW-14b2	DWW-14bh2	DWW-15a	DWW-15ah	DWW-15b	DWW-15bh	DWW-16a	DWW-16ah	DWW-16b	DWW-16bh	DWW-17EB	DWW-18a	DWW-18ah	DWW-19a	DWW-19ah	DWW-20a1	DWW-20ah1	DWW-20a2	DWW-20ah2	DWW-20b	DWW-20bh	DWW-21a	DWW-21ah
CHLORINATED PESTICIDES																																			
Aldrin	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
alpha-BHC	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
beta-BHC	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
gamma-BHC (Lindane)	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
delta-BHC	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
Chlordane	0.6	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
p,p'-DDD	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
p,p'-DDE	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
p,p'-DDT	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
Dieldrin	0.3	ND		ND		**0.013**		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		**0.058**	
Endosulfan	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
Endosulfan II	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
Endosulfan Sulfate	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
Endrin	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
Endrin Aldehyde	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
Endrin Ketone	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
Heptachlor	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
Heptachlor Epoxide	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
Methoxychlor	0.3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
Toxaphene	0.0	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
Surrogate TCMX		NC		**69 (%)**		**66 (%)**		**78 (%)**		NC		**87 (%)**		**100 (%)**		NC		**90 (%)**		**109 (%)**		**83 (%)**			**89 (%)**		**104 (%)**		**187 (%)**		**69 (%)**		**71 (%)**		**87 (%)**	
Surrogate Decachlorobiphenyl		NC		**43 (%)**		**35 (%)**		**50 (%)**		**228 (%)**		**35 (%)**		**44 (%)**		**267 (%)**		**35 (%)**		**34 (%)**		**45 (%)**			**50 (%)**		**50 (%)**		**73 (%)**		**11 (%)**		**36 (%)**		**69 (%)**	

Analyte	Reporting Limit (soil) (mg/kg)	DWW-12a (mg/kg)	DWW-12b (mg/kg)	DWW-12bh (mg/kg)	DWW-13a (mg/kg)	DWW-13ah (mg/kg)	DWW-13b (mg/kg)	DWW-13bh (mg/kg)	DWW-14a (mg/kg)	DWW-14ah (mg/L)	DWW-14b1 (mg/L)	DWW-14bh1 (mg/L)	DWW-14b2 (mg/kg)	DWW-14bh2 (mg/kg)	DWW-15a (mg/kg)	DWW-15ah (mg/kg)	DWW-15b (mg/kg)	DWW-15bh (mg/kg)	DWW-16a (mg/kg)	DWW-16ah (mg/kg)	DWW-16b (mg/kg)	DWW-16bh (mg/kg)	DWW-17EB (mg/L)	DWW-18a (mg/kg)	DWW-18ah (mg/kg)	DWW-19a (mg/kg)	DWW-19ah (mg/kg)	DWW-20a1 (mg/kg)	DWW-20ah1 (mg/kg)	DWW-20a2	DWW-20ah2	DWW-20b	DWW-20bh	DWW-21a	DWW-21ah
POLYCHLORINATED BEPHENYLS																																			
PCB 1016	0.04	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
PCB 1221	0.04	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
PCB 1232	0.04	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
PCB 1242	0.04	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
PCB 1248	0.04	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
PCB 1254	0.04	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
PCB 1260	0.04	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND	
Surrogate TCMX		**57 (%)**		**50 (%)**		**45 (%)**		**52 (%)**		**80 (%)**		**52 (%)**		**59 (%)**		**80 (%)**		**57 (%)**		**60 (%)**		**76 (%)**			**92 (%)**		**86 (%)**		**72 (%)**		**77 (%)**		**73 (%)**		**87 (%)**	
Surrogate Decachlorobiphenyl		**110 (%)**		**51 (%)**		**45 (%)**		**60 (%)**		**65 (%)**		**54 (%)**		**65 (%)**		**98 (%)**		**63 (%)**		**88 (%)**		**107 (%)**			**105 (%)**		**98 (%)**		**75 (%)**		**65 (%)**		**85 (%)**		**101 (%)**	

Analyte	Reporting Limit (soil) (mg/kg)	DWW-12a (mg/kg)	DWW-12ah (mg/kg)	DWW-12b (mg/kg)	DWW-12bh (mg/kg)	DWW-13a (mg/kg)	DWW-13ah (mg/kg)	DWW-13b (mg/kg)	DWW-13bh (mg/kg)	DWW-14a (mg/kg)	DWW-14ah (mg/L)	DWW-14b1 (mg/L)	DWW-14bh1 (mg/L)	DWW-14b2 (mg/kg)	DWW-14bh2 (mg/kg)	DWW-15a (mg/kg)	DWW-15ah (mg/kg)	DWW-15b (mg/kg)	DWW-15bh (mg/kg)	DWW-16a (mg/kg)	DWW-16ah (mg/kg)	DWW-16b (mg/kg)	DWW-16bh (mg/kg)	DWW-17EB (mg/L)	DWW-18a (mg/kg)	DWW-18ah (mg/kg)	DWW-19a (mg/kg)	DWW-19ah (mg/kg)	DWW-20a1 (mg/kg)	DWW-20ah1 (mg/kg)	DWW-20a2	DWW-20ah2	DWW-20b	DWW-20bh	DWW-21a	DWW-21ah	DWW-FB1	DWW-FB2
AROMATC & TOTAL PURGEABLE PETROLEUM HYDROCARBONS																																					
Benzene	0.013	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		ND	ND
Toluene	0.013	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		ND	ND
Ethylbenzene	0.013	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		ND	ND
Xylenes (Total)	0.013	ND		ND		ND		ND		ND		ND		ND		ND		ND		**0.17**		**0.013**			ND		ND		ND		ND		ND		ND		ND	ND
Methyl tert-Butyl Ether (MTBE)	0.63	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		ND	ND
Surrogate 4-BFB (FID)		**353 (%)**		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		ND	ND
Surrogate 4-BFB (PID)		**122 (%)**		**98 (%)**		**121 (%)**		**97 (%)**		**132 (%)**		**99 (%)**		**105 (%)**		**133 (%)**		**104 (%)**		**125 (%)**		**93 (%)**			**96 (%)**		**63 (%)**		**61 (%)**		**59 (%)**		**100 (%)**		**96 (%)**		**75 (%)**	**75 (%)**

Analyte	Reporting Limit (soil) (mg/kg)	DWW-12a (mg/kg)	DWW-12ah (mg/kg)	DWW-12b (mg/kg)	DWW-12bh (mg/kg)	DWW-13a (mg/kg)	DWW-13ah (mg/kg)	DWW-13b (mg/kg)	DWW-13bh (mg/kg)	DWW-14a (mg/kg)	DWW-14ah (mg/L)	DWW-14b2 (mg/L)	DWW-14b1 (mg/L)	DWW-14bh1 (mg/kg)	DWW-14bh2 (mg/kg)	DWW-15a (mg/kg)	DWW-15ah (mg/kg)	DWW-15b (mg/kg)	DWW-15bh (mg/kg)	DWW-16a (mg/kg)	DWW-16ah (mg/kg)	DWW-16b (mg/kg)	DWW-16bh (mg/kg)	DWW-17EB (mg/kg)	DWW-18a (mg/kg)	DWW-18ah (mg/kg)	DWW-19a (mg/kg)	DWW-19ah (mg/kg)	DWW-20a1 (mg/kg)	DWW-20ah1 (mg/kg)	DWW-20a2	DWW-20ah2	DWW-20b	DWW-20bh	DWW-21a	DWW-21ah	Lab Blank
Oil & Grease	10		**79,200**		ND		**8,100**		ND		**125,000**		**1,230**		**1,350**		**128,000**		**423**		**30,700**		**1,740**			ND		**36**		**67,200**		**63,000**		**870**		ND	ND

TPH: Total Petroleum Hydrocarbons

ND: None Detected at Reporting Limit

NC: A result could not be calculated due to matrix interference.

mg/kg: millligrams/kilogram = parts per million

µg/L: micrograms/liter = parts per billion

*Reporting Limit - 10 mg/kg

DELTA WETLANDS / IN-DELTA STORAGE, PHASE II ESA

SOIL SAMPLE RESULTS

Organophosphorus Pesticides & Semivolitile Organic Compounds

Analyte	Reporting Limit (soil) (mg/kg)	DWW-12a (mg/kg)	DWW-12ah (mg/kg)	DWW-12b (mg/kg)	DWW-12bh (mg/kg)	DWW-13a (mg/kg)	DWW-13ah (mg/kg)	DWW-13b (mg/kg)	DWW-13bh (mg/kg)	DWW-14a (mg/kg)	DWW-14ah (mg/kg)	DWW-14b1 (mg/kg)	DWW-14bh1 (mg/kg)	DWW-14b2 (mg/kg)	DWW-14bh2 (mg/kg)	DWW-15a (mg/kg)	DWW-15ah (mg/kg)	DWW-15b (mg/kg)	DWW-15bh (mg/kg)	DWW-16a (mg/kg)	DWW-16ah (mg/kg)	DWW-16b (mg/kg)	DWW-16bh (mg/kg)	DWW-17EB (mg/kg)	DWW-18a (mg/kg)	DWW-18ah (mg/kg)	DWW-19a (mg/kg)	DWW-19ah (mg/kg)	DWW-20a1 (mg/kg)	DWW-20ah1 (mg/kg)	DWW-20a2	DWW-20ah2	DWW-20b	DWW-20bh	DWW-21a	DWW-21ah	DWW-FB1	DWW-FB2
ORGANOPHOSPHORUS PESTICIDES																																						
Chlorpyrifos (Dursban)	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Coumaphos	20	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Demeton (O & S)	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Diazinon	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Dichlorvos	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Disulfoton (Di-Syston)	70	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Ethoprophos (Prophos)	70	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Fensulfothion	10	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Fenthion	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Azinphos methy (Guthion)	20	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Merphos	20	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Parathion methyl	70	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Naled (Dibrom)	70	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Phorate (Thimet)	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Mevinphos (Phosdrin)	20	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Ronnel (Fenchlorophos)	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Bolstar (Sulprofos)	10	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Stirophos (Tetrachlorvinphos)	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Tokuthion (Prothiofos)	4	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Trichloronate	10	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Surrogate-Tributylphosphate		**75 (%)**		**54 (%)**		**83 (%)**		NC		NC		NC		**106 (%)**		NC		NC		NC		NC			**77 (%)**		NC		**226 (%)**		**140 (%)**		**83 (%)**		NC		
Surrogate-Triphenylphosphate		**96 (%)**		**49 (%)**		**127 (%)**		**65 (%)**		**553 (%)**		**501 (%)**		**132 (%)**		**519 (%)**		**231 (%)**		**254 (%)**		**236 (%)**			**109 (%)**		**175 (%)**		**184 (%)**		**181 (%)**		**123 (%)**		**147 (%)**		

Analyte	Reporting Limit (soil) (mg/kg)	DWW-12a (mg/kg)	DWW-12ah (mg/kg)	DWW-12b (mg/kg)	DWW-12bh (mg/kg)	DWW-13a (mg/kg)	DWW-13ah (mg/kg)	DWW-13b (mg/kg)	DWW-13bh (mg/kg)	DWW-14a (mg/kg)	DWW-14ah (mg/kg)	DWW-14b1 (mg/kg)	DWW-14bh1 (mg/kg)	DWW-14b2 (mg/kg)	DWW-14bh2 (mg/kg)	DWW-15a (mg/kg)	DWW-15ah (mg/kg)	DWW-15b (mg/kg)	DWW-15bh (mg/kg)	DWW-16a (mg/kg)	DWW-16ah (mg/kg)	DWW-16b (mg/kg)	DWW-16bh (mg/kg)	DWW-17EB (mg/L)	DWW-18a (mg/kg)	DWW-18ah (mg/kg)	DWW-19a (mg/kg)	DWW-19ah (mg/kg)	DWW-20a1 (mg/kg)	DWW-20ah1 (mg/kg)	DWW-20a2	DWW-20ah2	DWW-20b	DWW-20bh	DWW-21a	DWW-21ah	DWW-FB1	DWW-FB2
SEMIVOLATILE ORGANIC COMPOUNDS																																						
Acenaphtene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Acenaphthylene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Anthracene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Benzo(a)anthracene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Benzo(b)fluoranthene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Benzo(k)fluoranthene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Benzo(ghi)perylene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Benzo(a)pyrene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Chrysene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Dibenzo(a,h)anthracene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Fluoranthene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Fluorene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Indeno(1,2,3-cd)pyrene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Napthalene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		**0.45**			ND		ND		ND		ND		ND		ND		
Phenanthrene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Pyrene	50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		ND		ND		ND		
Surrogate Nitrobenzene-d5		**86 (%)**		**89 (%)**		**97 (%)**		**96 (%)**		**104 (%)**		**98 (%)**		**86 (%)**		**86 (%)**		**90 (%)**		**112 (%)**		**116 (%)**			**86 (%)**		**95 (%)**		**83 (%)**		**76 (%)**		**80 (%)**		**90 (%)**		
Surrogate 2-Fuorobiphenyl		**109 (%)**		**90 (%)**		**105 (%)**		**86 (%)**		**124 (%)**		**113 (%)**		**97 (%)**		**87 (%)**		**90 (%)**		**124 (%)**		**115 (%)**			**86 (%)**		**99 (%)**		**112 (%)**		**108 (%)**		**71 (%)**		**89 (%)**		
Surrogate Terphenyl-d14		**115 (%)**		**100 (%)**		**160 (%)**		**99 (%)**		**17 (%)**		**170 (%)**		**141 (%)**		**16 (%)**		**107 (%)**		**80 (%)**		**83 (%)**			**70 (%)**		**90 (%)**		**161 (%)**		**164 (%)**		**68 (%)**		**89 (%)**		
Surrogate 2-Fuorophenol		**71 (%)**		**75 (%)**		**80 (%)**		**73 (%)**		**77 (%)**		**79 (%)**		**72 (%)**		**67 (%)**		**71 (%)**		**92 (%)**		**84 (%)**			**70 (%)**		**76 (%)**		**83 (%)**		**78 (%)**		**65 (%)**		**73 (%)**		
Surrogate Phenol-d6		**86 (%)**		**87 (%)**		**94 (%)**		**86 (%)**		**98 (%)**		**94 (%)**		**80 (%)**		**77 (%)**		**82 (%)**		**107 (%)**		**90 (%)**			**84 (%)**		**90 (%)**		**97 (%)**		**93 (%)**		**75 (%)**		**84 (%)**		
Surrogate 2,4,6-Tribromophenol		**54 (%)**		**87 (%)**		**69 (%)**		**92 (%)**		**92 (%)**		**86 (%)**		**91 (%)**		**67 (%)**		**75 (%)**		**76 (%)**		**112 (%)**			**90 (%)**		**103 (%)**		**82 (%)**		**90 (%)**		**77 (%)**		**85 (%)**		

TPH: Total Petroleum Hydrocarbons

ND: None Detected at Reporting Limit

NC: A result could not be calculated due to matrix interference.

mg/kg: milligrams/kilogram = parts per million

µg/L: micrograms/liter = parts per billion

*Reporting Limit - 10 mg/kg

APPENDIX C

Soil sample analytical results consist of approximately 300 pages. A copy of the results will be provided upon request.